

MODERN LIFE ARITHMETICS

SIX - BOOK SERIES

BOOK ONE

WITH ANSWERS

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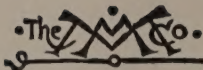
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FOWLKES & GOFF

THE MODERN LIFE ARITHMETICS

BOOK ONE



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THE MODERN LIFE ARITHMETICS

SIX-BOOK SERIES BOOK ONE

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TO TEACHERS WHO USE THIS BOOK:

This is Book One of a series of six books which constitute a "Modern Life Arithmetic" curriculum. In examining and using this book, will you please note the following:

1. Children learn by reading only if they can understand what they read. This book is written in terms which the child easily understands. Not only does this book conform to vocabulary studies of isolated words, but great attention has been given to sentence and paragraph structure. Many of the problems have been taken directly from the daily conversation of children.

2. An attempt has been made to introduce all arithmetical principles through means of natural social situations. Also, useless and artificial material has been omitted.

3. Great care has been taken with the abstract material in this volume.

- (a) It is complete as to number combinations.
- (b) It has been developed in order of learning difficulty.
- (c) Special emphasis has been given to the zero concept as it appears in daily life.
- (d) The zero difficulties have been isolated and grouped.
- (e) Subtraction is presented in its three different forms instead of only one, as is usually the case.

- (f) Drill is provided in isolated form in connection with the combination development and also as it occurs in mixed form.

4. By means of very thorough and exhaustive chapter reviews, coupled with a self-diagnostic technique addressed directly to the pupil, practical provision is made for individual differences. Also, the fundamental combinations are developed and presented so that individualization of instruction is automatic.

5. Proving all computation is developed early in the book and is stressed throughout.

6. Carefully prepared vocabulary drills* are found throughout the book, and care has been taken also to use specific arithmetical terms in their natural setting.

7. Special emphasis has been given to the correlation of arithmetic with all subjects and life in general. The wealth of civic and character situations stressed throughout the book is proof of this.

8. An unusually large amount of illustrative material, including both colored and black and white work, has been included.

9. Generous use has been made of the project form of organization, and at the same time guidance has been provided toward the important elements in the material at hand.

10. The problems contain number combinations carefully selected with relation to drill needs.

This material has been used in experimental editions in some twenty states. It has been criticized page for page by hundreds of administrative officers, teachers, and children.

The authors wish to make grateful acknowledgment

to the many administrative officers, teachers, and children who have rendered valuable help in refining the material before it was published in this form. This group is unnamed here only because lack of space will not allow it. Special acknowledgment is due Dr. E. R. Hedrick, of the University of California at Los Angeles, for his services as general editor of the series. Acknowledgment is also due Dr. W. S. Taylor, Dean of the School of Education, University of Kentucky; Dr. W. W. Wright, Associate Professor of Education, Indiana University; and Irene Sauble, of the Detroit Public Schools, for their many criticisms and suggestions. To Ann Harris goes great credit for much of the statistical and clerical work involved in the development of the material in both experimental form and final edition.

JOHN GUY FOWLKES
THOMAS THEODORE GOFF

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BOOK ONE

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PART ONE

CHAPTER I

COUNTING AND READING AND WRITING NUMBERS

Mary's Lawn Party

Mary: Mother, may I have a little party to-morrow? We can play out under the trees.

Mother: Yes, Mary, you may. I have been thinking about that myself. You may invite several of your friends, and I will prepare some nice things to eat.

Mary: Oh! that will be fine. I'll invite Grace and Rose and Kate and May, and I'll invite John and Will and Charles and Harry and Dick. We will play games and tell stories and have lots of fun. I'll help you, Mother, to get ready for my party. May we have ice cream?

Mother: Yes, you may have some ice cream, and I'll make you a cake. I'll make some other good things, too.

The next day Mary had her party, just as Mary and her mother had planned, except that Dick could not come. Dick was sorry he could not come, but he had already promised to go down town with his grandmother and he felt that he should not break his promise. All the others came. John and Charles brought their dogs, and all had a fine time.

1. How many boys came to Mary's party?
2. How many boys could not come to Mary's party?
3. How many boys were invited to Mary's party?
4. How many girls do you see in the picture of Mary's party?
5. How many baskets do you see in the picture of Mary's party?
6. How many boys are standing?
7. How many boys are sitting?
8. How many girls are standing?
9. How many girls are sitting?
10. How many dogs do you see in the picture?
11. How many men do you see in the picture?
12. How many children do you see in the picture?



Counting

1. Can you count from one to nine?
2. Can you count farther than nine?
3. Count to yourself zero, one, two, three, four, five, and so on, as far as you can.
4. How many boys are there in your row in school?
5. How many girls are there in your row in school?

Numbers from Zero to Nine

1. Can you write the words zero, one, two, three, four, and so on, to nine? Try it.

2. Signs are sometimes used to represent the numbers that you have been writing in words. These signs are called **figures**. If we use figures instead of words, zero, or not any, is printed like this: 0; and it is written like this: 0 .

One is printed: 1; and it is written like this: 1 .

Two is printed: 2; and it is written like this: 2 .

Three is printed: 3; and it is written like this: 3 .

Four is printed: 4; and it is written like this: 4 .

Five is printed: 5; and it is written like this: 5 .

Six is printed: 6; and it is written like this: 6 .

Seven is printed: 7; and it is written like this: 7 .

Eight is printed: 8; and it is written like this: 8 .

Nine is printed: 9; and it is written like this: 9 .

3. Write the words for these figures:

6 1 8 3 9 0 5 2 7 4

4. Write the figures for these words: three, seven, five, eight, two, nine, one, four, zero, six.

Words and Figures in Arithmetic

As you have just learned, sometimes numbers are written with words and sometimes with figures. From now on, you should use **figures** in writing numbers when you are working in arithmetic unless you are told to use words. When you are writing letters or stories, you should use **words**.

Review of Numbers from Zero to Nine

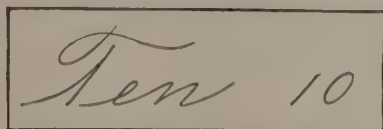
1. What number comes just after 6? Just after 2?
 2. What number comes just before 9? Just before 5?
 3. What number comes just after 1? Just before 7?
- Just after 8? Just after 4? Just after 3? Just before 6? Just before 8? Just after 5? Just before 1? Just after 0? Just before 3? Just before 4? Just after 7? Just before 2?

1	3	0	4	2
9	5	7	6	8

4. Read the figures in the top row in the box.
5. Read the figures in the bottom row.
6. Read these figures: 4, 7, 1, 3, 9, 2, 0, 5, 8, 6.
7. Write the words for these figures: 8, 1, 5, 0, 4, 6, 2, 7, 9, 3.
8. How many years old are you? Write the figure.
9. What is the number of this page? Write the word.

Numbers from Ten to Twenty

1. Do you know what the next number after 9 is? It is ten. It is printed like this: 10; and it is written like this: *10* . Write the word. Write it in figures.



2. The next ten numbers are eleven, twelve, thirteen, fourteen, fifteen, sixteen, seventeen, eighteen, nineteen, and twenty. They are written in words and figures like this:

<i>Eleven</i>	<i>11</i>
<i>Twelve</i>	<i>12</i>
<i>Thirteen</i>	<i>13</i>
<i>Fourteen</i>	<i>14</i>
<i>Fifteen</i>	<i>15</i>
<i>Sixteen</i>	<i>16</i>
<i>Seventeen</i>	<i>17</i>

<i>Eighteen</i>	18
<i>Nineteen</i>	19
<i>Twenty</i>	20

Practice with Numbers to Ninety-Nine

1. What number comes just after 16? What number comes just before 19? Just after 13? Just after 18? Just before 15? Count: 12, 13, 14, and so on, to 20.

2. Count: 20, 19, 18, and so on, back to 1.

3. Count from twenty to twenty-nine.

4. Write the figures for these words: twenty-three, twenty-six, twenty-four, twenty, twenty-nine, twenty-five, twenty-eight, twenty-two, twenty-one, twenty-seven.

5. Write the words for these numbers:

25 20 21 29 23 28 24 27 22 26

6. Count from thirty to thirty-nine.

7. Write the figures for these words: thirty-two, thirty, thirty-seven, thirty-five, thirty-eight, thirty-four, thirty-one, thirty-nine, thirty-three, thirty-six.

8. Write the words for these numbers:

34 30 32 37 33 38 35 39 31 36

9. Count from forty to ninety-nine.

10. Write the figures for these words: forty-five, fifty-two, eighty-six, forty-nine, sixty-one, ninety-seven, sixty, forty-three, seventy-eight, fifty-four.

11. Read these numbers: 57, 63, 94, 21.
12. Which is larger, 30 or 70? 47 or 81? 72 or 59?
13. Which is smaller, 49 or 62? 83 or 57? 65 or 56?
14. Which is nearer to 99, 79 or 48?
15. Which is nearer to 50, 40 or 70?
16. Which is nearer to 1, 57 or 39?
17. Count by 2's from 2 to 18.
18. Count by 3's from 3 to 27.
19. Count by 4's from 4 to 36.
20. Count by 5's from 5 to 45.
21. Count by 10's from 10 to 90.

Reading and Writing Some New Numbers

1. You have already learned the numbers from 0 to 99. The next number after ninety-nine is one hundred. It is printed in figures like this: 100; and it is written like this: *100* .

2. One hundred is 10 tens.

One hundred 100

3. The next number is one hundred one, and it is written like this: *101* .

4. The next is one hundred two, and it is written: *102* .

5. Write in figures: one hundred three, one hundred four, one hundred five, one hundred six, one hundred seven, one hundred eight, one hundred nine.

6. The next number is one hundred ten. It is written: *110* .

7. Write in figures: one hundred eleven, one hundred twelve, one hundred thirteen, one hundred fourteen, one hundred fifteen, one hundred sixteen, one hundred seventeen, one hundred eighteen, one hundred nineteen.

8. The next number is one hundred twenty. It is written: *120* .

9. Write, in figures, the numbers from 121 to 129.

10. One hundred thirty is written: *130* .

11. Write, in figures, the numbers from 131 to 139.

12. One hundred forty is written: *140* .

13. Write, in figures, the numbers from 141 to 149.

14. One hundred fifty is written: *150* . Write one hundred sixty, one hundred seventy, one hundred eighty, one hundred ninety.

15. Two hundred is written: *200* . Write three hundred, four hundred, five hundred, six hundred, seven hundred, eight hundred, nine hundred.

16. Nine hundred ninety-nine is written: *999* .

17. The number 456 is read "four hundred fifty-six."

18. The number 783 is read "seven hundred eighty-three."

19. Find page 176 in this book.

20. Read these numbers:

597 358 247 493 106 730 575 902 651 811

Review of Counting and Reading and Writing Numbers

1. Write all the numbers from 389 to 416; from 875 to 925.

2. Count 10, 20, 30, and so on, to 90. Count 100, 200, 300, and so on, to 900.

3. Count 110, 120, 130, and so on, to 190. Count 210, 220, 230, and so on, to 290.

4. Write in words:

67	84	21	10	33	15	45	70	243	750
98	52	469	555	120	937	510	981	602	358

5. Read these numbers:

79	56	23	92	80	11	35	51	48	61
601	232	936	599	894	308	730	525	101	417

6. What are the numbers between 702 and 727?

7. Count from 987 to 999.

8. Count by 2's from 2 to 100.

9. Count by 3's from 3 to 102.

10. Count by 4's from 4 to 100.

11. Count by 5's from 5 to 100.

CHAPTER II

LEARNING TO ADD



Jack and Tom are looking at some dominoes. Tom says: Jack, do you know how many 4 and 3 are?

Jack: Yes, I know. Do you?

Tom: I am not sure, but I think 4 and 3 are 7.

Jack: That is right; 4 and 3 are 7. And 3 and 4 are 7, too. Did you know that?

Tom: No, I had not noticed that, but I see it now. If 4 and 3 are 7, 3 and 4 must be 7.

Jack: Let's see what the rest of these make. I'll ask and you answer. How many are 2 and 1?

Tom: 2 and 1 are 3.

Jack: How many are 4 and 3?

Tom: Oh, I am sure of that now; 4 and 3 are 7.

Jack: How many are 6 and 1?

Tom: 6 and 1 are 7.

Jack: How many are 3 and 2?

Tom: 3 and 2 are 5.

Jack: How many are 1 and 1?

Tom: Oh, that's easy; 1 and 1 are 2.

Jack: I believe you know all of them now. How many are 3 and 4?

Tom: You can't catch me again on that one; 3 and 4 are 7.

Jack: Well, Tom, I see that you really know the answers to these questions. There are some more questions I could ask you about these, but we shall learn them some other time.

Tom: All right, Jack. I am anxious to learn about numbers as quickly as I can. My father uses numbers nearly all the time in his store. And I want to learn about them so that I can help him.

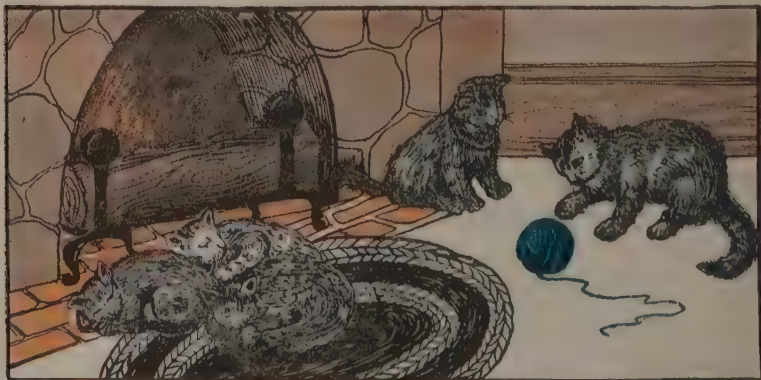
Did you know the answers to all Jack's questions? Were all Tom's answers correct?

You want to know about numbers, just as Tom does, don't you? Of course you do. There are many questions we cannot answer unless we know about numbers. In the next lesson there are some problems with questions like those Tom answered.

Twenty Addition Facts

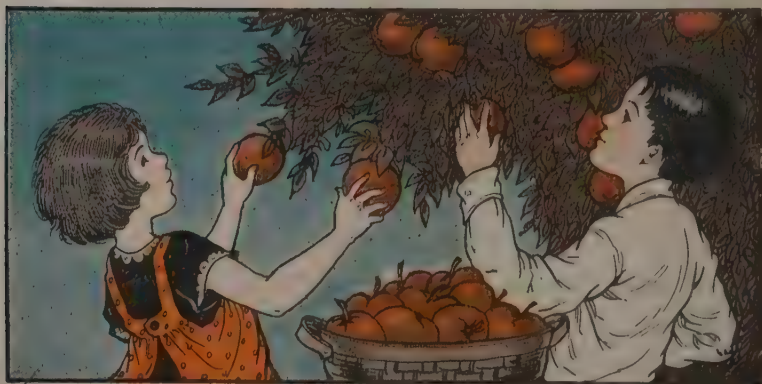
1. Three kittens are asleep near the fire, and 2 other kittens in the same room are playing with a ball. How many kittens are there in the room?

Do you see that you must know how many 3 and 2 are to answer the question in this problem about the kittens?



Do you remember how many 3 and 2 are? If you do, you know that 3 and 2 are 5. Then, there are 5 kittens in the room.

2. Dick picked 5 apples and put them into a basket. Mary picked 4 apples and put them into the same basket. How many apples were in the basket then?



What must you know to answer the question in this problem? Do you know how many 5 and 4 are? How many apples were in the basket after Dick put in 5 apples and Mary put in 4 apples?

Now do you think you can work some problems by yourself? Try them and see if you can. Your teacher will help you with those you cannot do.

3. Kate had 8 cents, and she found 1 cent. How many cents did she have then?

4. Two Christmas toys and 2 Christmas toys are how many Christmas toys?

5. Jack and his father went fishing. They drove 7 miles on the main road and 1 mile on a side road. How many miles did they drive?

6. Mary's doll has 5 school dresses and 3 party dresses. How many dresses has her doll in all?

7. Billy has 3 big boxes and 1 little box. How many boxes has Billy all together?



8. Grace had 1 doll, and her mother bought her 1 more doll. How many dolls had she then?

9. Harry had 5 pencils; Kate had 2 pencils. They put their pencils into one box. How many pencils did they both put into the box?

10. George bought 4 pieces of candy, and his sister gave him another piece of candy. How many pieces of candy did George have then?

11. Robert picked 7 peaches on Monday and 2 peaches on Tuesday. How many peaches did he pick in all?

12. Six birds lighted on a wire, and 1 more bird lighted beside them. How many birds were on the wire then?



13. Charles had 4 marbles, and he found 3 marbles. How many marbles had he then?

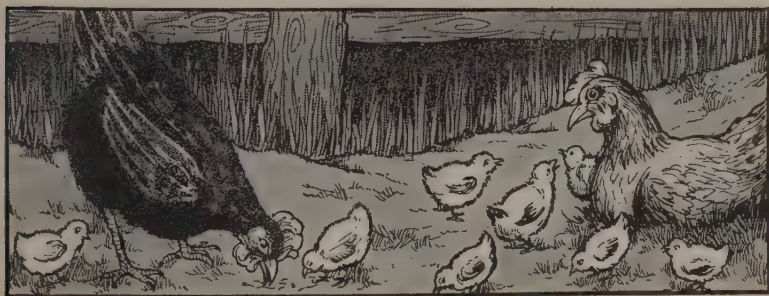
14. Frank had 3 tops, and his cousin gave him 3 more tops. How many tops did Frank then have?

15. Anne had 6 cents in her savings bank, and she put in 3 more cents. How many cents had she then in her bank?

16. There are 5 trees in the garden and 1 tree in the yard. How many trees are there in the garden and yard together?

17. Betty made 4 dresses for her big doll and 2 dresses for her little doll. How many doll dresses did she make?

18. My gray hen has 6 little chicks, and my black hen has 2 little chicks. If the little chicks of both hens are put into the same pen, how many little chicks will then be in the pen?



19. The first week of spring Charles saw 2 robins on the lawn and 1 robin in the garden. How many robins did Charles see?

20. Mary gave her grandmother 4 white roses and 4 red roses. How many roses did Mary give her grandmother all together?

Now can you make up some problems like these about your pets, your toys, your brothers, your sisters, your money, or something that you have, or something that you do? If you can, show your teacher what good problems you can make. Then work your own problems.

Writing These Twenty Addition Facts Another Way

On page 18 are the twenty facts you needed to know to work the problems you have just solved. If you missed any of them, find the facts for those problems in the following list and study them hard. It is a

good thing to study all these facts, even if you know them now, so that you can think of them quickly the next time you need them.

Often when we want to know how much one number and another number are all together, we write one under the other with a short line under the last number, as you see them here.

	1.	2.	3.	4.	5.
(A)	3 1 <hr/> 4	5 3 <hr/> 8	3 2 <hr/> 5	2 2 <hr/> 4	1 1 <hr/> 2
(B)	7 1 <hr/> 8	4 3 <hr/> 7	5 4 <hr/> 9	3 3 <hr/> 6	4 1 <hr/> 5
(C)	6 2 <hr/> 8	5 1 <hr/> 6	5 2 <hr/> 7	6 3 <hr/> 9	6 1 <hr/> 7
(D)	4 2 <hr/> 6	8 1 <hr/> 9	4 4 <hr/> 8	7 2 <hr/> 9	2 1 <hr/> 3

Some Words You Should Know

If we put 3 cents and 2 cents together, we get 5 cents. If we put 4 cents and 3 cents together, we get 7 cents. Facts like these, where numbers are put together to find out how much they make in all, are called **addition facts**. Perhaps you noticed that the names of the last

two lessons have the words "addition facts" in them. When we put 3 and 2 together and get 5, we **add** 3 and 2. When we put 4 and 3 together and get 7, we **add** 4 and 3.

How many are 3 and 2? Since 3 and 2 are 5, 5 is the **answer**. The answer in addition is called the **sum**. The **sum** of 3 and 2 is 5. The **sum** of 4 and 3 is 7.

Remember that to **add** two numbers you must find a number which is just the same as the two numbers put together. Also remember that the answer you get when you add is called the **sum**.

What does "add" mean?

What does "sum" mean?

Sixteen New Addition Facts

Here are some new problems for you. They are almost like the ones you worked before. If you know how much 3 and 2 are, it should be easy for you to see how much 2 and 3 are. You know 3 and 2 are 5. You should know that 2 and 3 are 5. It is just the same with other facts like these; 4 and 3 are 7, 3 and 4 are 7; 6 and 2 are 8, 2 and 6 are 8; and so on. So, you see, the problems you have just worked will help you to work these. Work these problems in the same way that you worked the others. Be careful. Do not guess at the answers. Ask your teacher to help you if you are not sure.

1. Kate and her mother made 1 dress for her doll on Monday and 7 dresses on Wednesday. How many dresses did Kate and her mother make all together?

2. Kate has 3 red beads and 5 blue beads. How many beads has she all together?

3. George put 2 goldfish into a fish globe, and his brother put in 4 goldfish. How many goldfish did they put into the globe?

4. While they were playing hide and seek, 2 boys hid behind a barn. Then 3 more boys hid with them. How many boys were hiding behind the barn?



5. Frank has 1 marble in his left hand and 3 marbles in his right hand. If Frank holds them all in his left hand, how many marbles will be in his left hand?

6. In the class that Kate attends, there are 3 boys and 6 girls. How many children are there in the class?

7. James put 1 pencil into a pencil box, and his teacher put in 4 pencils. How many pencils did they both put into the box?

8. One evening before dinner Mary read 1 page in a story book, and after dinner that evening she read 6 pages. How many pages did Mary read that evening?

9. John received 2 Christmas presents from his uncles and 5 Christmas presents from his aunts. How

many Christmas presents did John receive from his uncles and aunts together?

10. George went to school 4 days one week and 5 days the next week. How many days did George go to school in both weeks?

11. Last night I saw 2 bright stars in the west and 6 bright stars in the north. How many bright stars did I see in the west and north together?

12. Grace and Kate were cutting out paper dolls. Grace cut out 1 paper doll and laid it on the table,



and Kate cut out 5 paper dolls and laid them on the same table. How many paper dolls did both girls put on the table?

13. John made 1 mud pie and put it on a rock. His sister made 2 mud pies and put them on the same rock. How many mud pies did John and his sister put on the rock together?

14. James saw 3 birds on the lawn, and Henry saw 4 other birds on the lawn. How many birds did they both see on the lawn?

15. I have 1 cousin who lives in the country and 8 cousins who live in the city. How many cousins have I?

16. Kate picked 2 flowers in the field and 7 flowers in the garden. How many flowers did Kate pick?

Writing These Sixteen Addition Facts the New Way

Here are the sixteen addition facts you needed to know in working the problems you have just solved. Practice on them until you know every one of them. You will use these facts in working other problems.

	1.	2.	3.	4.
(A)	$\begin{array}{r} 2 \\ 3 \\ \hline 5 \end{array}$	$\begin{array}{r} 1 \\ 7 \\ \hline 8 \end{array}$	$\begin{array}{r} 2 \\ 4 \\ \hline 6 \end{array}$	$\begin{array}{r} 3 \\ 5 \\ \hline 8 \end{array}$
(B)	$\begin{array}{r} 1 \\ 3 \\ \hline 4 \end{array}$	$\begin{array}{r} 3 \\ 6 \\ \hline 9 \end{array}$	$\begin{array}{r} 1 \\ 4 \\ \hline 5 \end{array}$	$\begin{array}{r} 1 \\ 6 \\ \hline 7 \end{array}$
(C)	$\begin{array}{r} 2 \\ 5 \\ \hline 7 \end{array}$	$\begin{array}{r} 4 \\ 5 \\ \hline 9 \end{array}$	$\begin{array}{r} 2 \\ 6 \\ \hline 8 \end{array}$	$\begin{array}{r} 1 \\ 5 \\ \hline 6 \end{array}$
(D)	$\begin{array}{r} 1 \\ 2 \\ \hline 3 \end{array}$	$\begin{array}{r} 3 \\ 4 \\ \hline 7 \end{array}$	$\begin{array}{r} 1 \\ 8 \\ \hline 9 \end{array}$	$\begin{array}{r} 2 \\ 7 \\ \hline 9 \end{array}$

Twenty-Five New Addition Facts

Here are twenty-five more addition facts. Study them till you know them. Add downward.

	1.	2.	3.	4.	5.
(A)	5 5 <hr/> 10	9 2 <hr/> 11	6 6 <hr/> 12	8 2 <hr/> 10	9 1 <hr/> 10
(B)	7 3 <hr/> 10	6 5 <hr/> 11	8 4 <hr/> 12	7 7 <hr/> 14	8 3 <hr/> 11
(C)	6 4 <hr/> 10	9 3 <hr/> 12	7 6 <hr/> 13	8 8 <hr/> 16	7 4 <hr/> 11
(D)	9 9 <hr/> 18	8 6 <hr/> 14	9 4 <hr/> 13	8 7 <hr/> 15	9 5 <hr/> 14
(E)	9 7 <hr/> 16	8 5 <hr/> 13	9 6 <hr/> 15	7 5 <hr/> 12	9 8 <hr/> 17

Twenty New Addition Facts

On page 24 are twenty new addition facts. If you know the twenty-five facts just given, you will have no trouble with these, because some of them just have the numbers exchanged. If you know how much 9

and 2 are, it is easy to say how much 2 and 9 are. Do you see that 2 and 9 make just the same as 9 and 2? Study these till you know them. Add downward.

	1.	2.	3.	4.	5.
(A)	1 9 <hr/> 10	2 8 <hr/> 10	4 7 <hr/> 11	2 9 <hr/> 11	4 6 <hr/> 10
(B)	3 9 <hr/> 12	4 8 <hr/> 12	5 6 <hr/> 11	3 7 <hr/> 10	4 9 <hr/> 13
(C)	3 8 <hr/> 11	5 9 <hr/> 14	6 8 <hr/> 14	7 9 <hr/> 16	5 8 <hr/> 13
(D)	6 9 <hr/> 15	5 7 <hr/> 12	8 9 <hr/> 17	6 7 <hr/> 13	7 8 <hr/> 15

Using Zero in Addition

Do you remember the names of these numbers?

0 1 2 3 4 5 6 7 8 9

What is the first number called?

Remember that **zero** means **nothing**, or **none**, or **not any**.

Put 3 cents of play money in your left hand. Leave your right hand empty. How many cents are in your left hand? How many cents are in your right

hand? If you put the money from both hands into a box, how many cents will you have in the box? Do you see that 3 cents and 0 cents are 3 cents? Also, do you see that 0 cents and 3 cents are 3 cents? If you add 3 and 0, what do you get? If you add 0 and 3, what do you get?

3 and 0 are 3.

0 and 3 are 3.

From this, do you see that, if you add 0 to a number, the sum is the same as the number itself? Thus, 1 and 0 are 1; 5 and 0 are 5; and so on.

Also, do you see that, if you add a number to 0, the sum is the same as the number itself? Thus, 0 and 2 are 2; 0 and 6 are 6; and so on.

Name the sums of these:

0 and 3

0 and 4

1 and 0

4 and 0

3 and 0

9 and 0

7 and 0

0 and 2

0 and 0

0 and 6

8 and 0

2 and 0

0 and 1

0 and 9

0 and 5

5 and 0

6 and 0

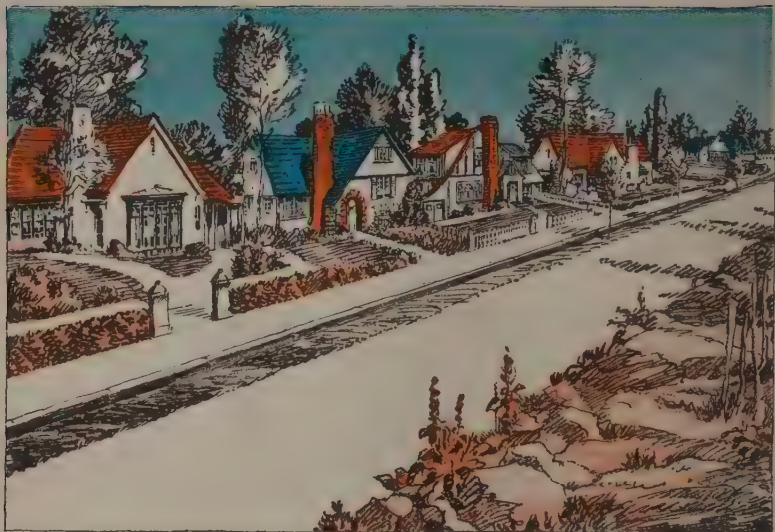
0 and 8

0 and 7

Zero added to any number gives the number.

Addition Problems with Zeros

Here are some problems containing zeros. Many people make mistakes in using zeros; so be very careful. Just remember that, when you add zero and a number, the sum is always the same as the number.



1. There are 5 houses on the west side of the street. On the east side of the street there are no houses. How many houses are on the street?

2. On Tuesday Dick ate 4 pieces of candy, but on Wednesday he ate no candy. How many pieces of candy did he eat on Tuesday and Wednesday together?

3. Grace has no pencils, and Jack has 2 pencils. If they put them all into a box, how many pencils will they put into the box?

4. Jack has 7 cents in his right hand and nothing in his left hand. If he puts the money from both hands into a bank, how much will he put into the bank?

5. On Friday Charles took a letter to the post office and earned 3 cents. On Saturday Charles did not earn any money. How many cents did Charles earn on Friday and Saturday together?

6. Jack's father had no horses. Billy's father had 6 horses. If all their horses were put into the same pasture, how many horses would they have in the pasture?

7. Kate found 9 eggs in one nest and no eggs in another nest. How many eggs did Kate find all together?

Some New Words and Signs

You have already learned that we use figures to stand for words. We also use **signs** to stand for words. When we say 3 and 2 are 5, we may use a little sign, like this: $+$, in place of "and." Thus, $3 + 2$ are 5. The sign $+$ is called **plus** and means **and**.

We may also use a little sign, like this: $=$, in place of "are." The sign $=$ is called the **equals** sign, and means **is or are**. When two things are the **same**, we say they are **equal**. The sign $=$ is read "equal" or "equals." $3 + 2 = 5$ is read "three plus two equals five" or "3 and 2 are 5."

Can you see that it is much easier to use figures and signs than to use words? Write in words: Seven and four are eleven. Now write the same thing with figures and signs, like this: $7 + 4 = 11$.





Write the following with figures and signs:

1. Nine and eight are seventeen.
2. Seven and six are thirteen.
3. Eight and seven are fifteen.
4. Nine and six are fifteen.

Write the following in words:

5. $9 + 7 = 16$
6. $7 + 5 = 12$
7. $9 + 5 = 14$

Days of the Week and the Month

DECEMBER						
S	M	T	W	T	F	S
-	-	-	-	-	-	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31	-	Last Quarter  3rd	New Moon  12th	First Quarter  19th	Full Moon  26th

1. Do you know the names of the days of the week? They are Sunday, Monday, Tuesday, Wednesday, Thursday, Friday, and Saturday.

2. How many days are there in one week?

3. What do you think the letters stand for in the calendar shown above?

4. What is the name of the month in the calendar shown above?

5. How many days are there in December?

6. How many Sundays were there in this December?

7. How many Mondays were there in this December?

8. How many Tuesdays were there in this December?

9. How many Wednesdays? How many Fridays? How many Saturdays?

10. What do we celebrate on December 25?

The 100 Addition Facts

Here are the one hundred most important combinations you need to know in addition. If you do not

know some of them, study them. A good way to study them is to put a piece of paper under the ones you want to learn and write the answers till you know them.

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
(A)	0 <u>0</u>	3 <u>9</u>	6 <u>2</u>	8 <u>0</u>	4 <u>0</u>	2 <u>0</u>	5 <u>8</u>	9 <u>0</u>	1 <u>9</u>	7 <u>0</u>
(B)	1 <u>8</u>	0 <u>1</u>	3 <u>8</u>	5 <u>9</u>	2 <u>1</u>	6 <u>3</u>	9 <u>1</u>	8 <u>1</u>	7 <u>1</u>	4 <u>1</u>
(C)	3 <u>7</u>	8 <u>2</u>	0 <u>2</u>	9 <u>2</u>	1 <u>7</u>	2 <u>2</u>	5 <u>6</u>	6 <u>1</u>	4 <u>4</u>	7 <u>2</u>
(D)	5 <u>7</u>	8 <u>3</u>	3 <u>6</u>	0 <u>3</u>	1 <u>6</u>	9 <u>3</u>	2 <u>3</u>	6 <u>0</u>	4 <u>2</u>	7 <u>3</u>
(E)	9 <u>4</u>	7 <u>4</u>	3 <u>5</u>	5 <u>4</u>	0 <u>4</u>	1 <u>5</u>	2 <u>4</u>	4 <u>3</u>	6 <u>4</u>	8 <u>4</u>
(F)	9 <u>5</u>	7 <u>5</u>	6 <u>9</u>	5 <u>5</u>	3 <u>4</u>	0 <u>5</u>	1 <u>4</u>	2 <u>5</u>	4 <u>7</u>	8 <u>5</u>
(G)	9 <u>6</u>	8 <u>6</u>	7 <u>6</u>	5 <u>3</u>	3 <u>3</u>	1 <u>2</u>	0 <u>6</u>	2 <u>6</u>	4 <u>5</u>	6 <u>5</u>
(H)	9 <u>7</u>	6 <u>6</u>	8 <u>7</u>	7 <u>7</u>	5 <u>0</u>	1 <u>3</u>	3 <u>2</u>	0 <u>7</u>	2 <u>7</u>	4 <u>6</u>

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
(I)	9	8	7	6	5	4	3	1	0	2
	<u>8</u>	<u>8</u>	<u>8</u>	<u>7</u>	<u>2</u>	<u>9</u>	<u>1</u>	<u>1</u>	<u>8</u>	<u>8</u>
(J)	9	8	7	6	1	5	4	3	2	0
	<u>9</u>	<u>9</u>	<u>9</u>	<u>8</u>	<u>0</u>	<u>1</u>	<u>8</u>	<u>0</u>	<u>9</u>	<u>9</u>

Review of Some Important Words and Signs

In this lesson are some important words and signs that you have studied in arithmetic. You will use these words and signs often. Be sure you know the meaning of each of them.

Add To put numbers together to see how much they make in all.

To find one number that is exactly the same as two or more other numbers put together.

Addition Putting numbers together to see how much they make in all.

Finding the sum of two or more numbers.

Equal or The name of the sign $=$, which means that

Equals two things have the same value.

$=$ **Equal or equals.** The sign which means that two things have the same value.

Plus The name of the sign $+$, which means that you should add.

$+$ **Plus.** The sign which means that you should add.

Sum The answer to an addition problem.

Zero 0; nothing; none; not any.

Review

Here is a review of what you have been studying. Write the numbers 1 to 24 on a sheet of paper. After each number you have written, write the answer to the question that has the same number.

At the end of each question you will see a page number. If you missed any part of the test, turn back to the page number given after that part of the test, where you will find how to answer what you missed. Study what you missed until you are sure you know what to do. Then go back to the review and again try the part you missed. Do this until you do not miss anything or until your teacher tells you to work on something else.

1. What do you do when you add? (Page 19)
2. What is the answer in addition called? (Page 19)
3. How much are 3 and 5? (Page 22)
4. What does "zero" mean? (Page 24)
5. How much are 7 and 0? (Page 25)
6. How much are 0 and 0? (Page 25)
7. What is the sum of 5 and 4? (Page 18)
8. What is the sign that means "add" called?
(Page 27)
9. Write the sign that means "add." (Page 27)
10. Write the sign that means "equals." (Page 27)
11. Count by 3's from 3 to 27. (Page 9)
12. How many days are there in a week? (Page 28)
13. Is $3 + 4$ larger than $4 + 3$? (Pages 18 and 22)
14. Is $5 + 4$ larger than $3 + 5$? (Pages 18 and 22)
15. Write the sum of 6 and 3. (Page 18)
16. Is sixty a larger number than seventy? (Page 8)

17. Is $4 + 2$ larger than $3 + 3$? (Page 18)
18. Write the figures for ninety-eight. (Page 8)
19. Write the names of the days of the week.
(Page 28)
20. Is $5 + 2$ smaller than $3 + 5$? (Pages 18 and 22)
21. Using figures and signs, write: eight plus one equals nine. (Page 27)
22. Write $7 + 2 = 9$, using words. (Page 27)
23. What does $+$ mean? (Page 27)
24. What does $=$ mean? (Page 27)

CHAPTER III

LEARNING TO SUBTRACT



Tom: Jack, I have 5 cents in my bank. If I spend 2 cents for some candy, I wonder how much I'll have left.

Jack: I am not sure. But I think I know a way to find out. Let's put 5 cents on the table here. Now let's take away 2 of them. How many cents are there left?

Tom: Why, there are 3 cents left.

Jack: That's right. It is plain that there are 3 cents left. Then, 2 cents from 5 cents are 3 cents. Or 5 cents less 2 cents are 3 cents. Do you think you see now, Tom?

Tom: Yes, I see it all now. It is very plain.

Twenty Subtraction Facts

Would you like to find out some facts by yourself, in the same way that Tom and Jack did?

1. Put 9 cents of play money on your desk.



Now take away 2 cents from the 9 cents. How many cents are left on your desk?

2 cents from 9 cents are how many cents?

2 from 9 are how many?

9 cents less 2 cents are how many cents? (9 cents less 2 cents means 2 cents from 9 cents.)

9 less 2 are how many?

2. Now take away 3 cents from the 7 cents. How many cents are left?

3 cents from 7 cents are how many cents?

3 from 7 are how many?

7 cents less 3 cents are how many cents?

7 less 3 are how many?

3. Again place 9 cents on your desk. Now take away 4 cents. How many cents are left?

4 cents from 9 cents are how many cents?

4 from 9 are how many?

9 cents less 4 cents are how many cents?

9 less 4 are how many?

4. Now take away 2 more cents. How many cents are left?

2 cents from 5 cents are how many cents?

2 from 5 are how many?

5 cents less 2 cents are how many cents?

5 less 2 are how many?

5. Hold 9 cents of play money in your left hand. Now take 3 cents out of your left hand and hold them in your right hand. How many cents are in your left hand?

3 cents from 9 cents are how many cents?

3 from 9 are how many?

9 cents less 3 cents are how many cents?

9 less 3 are how many?

6. Now take 1 more cent from your left hand. How many cents are in your left hand?

1 cent from 6 cents are how many cents?

1 from 6 are how many?

6 cents less 1 cent are how many cents?

6 less 1 are how many?

7. Put 9 cents in your right hand. Now take 1 cent out of your right hand and hold it in your left hand. How many cents are in your right hand?

1 cent from 9 cents are how many cents?

1 from 9 are how many?

9 cents less 1 cent are how many cents?

9 less 1 are how many?

8. Now take 4 more cents from your right hand.
How many cents are in your right hand?

4 cents from 8 cents are how many cents?

4 from 8 are how many?

8 cents less 4 cents are how many cents?

8 less 4 are how many?

9. If you have 4 cents in one hand and you take away 1 cent, how many cents are left in your hand?

1 cent from 4 cents are how many cents?

1 from 4 are how many?

4 cents less 1 cent are how many cents?

4 less 1 are how many?

10. Now, take away 1 more cent. How many cents are left?

1 cent from 3 cents are how many cents?

1 from 3 are how many?

3 cents less 1 cent are how many cents?

3 less 1 are how many?

Using play money, find what is left for each of the following:

11. 2 cents from 4 cents

16. 1 cent from 2 cents

12. 3 cents from 6 cents

17. 1 cent from 5 cents

13. 2 cents from 7 cents

18. 2 cents from 8 cents

14. 2 cents from 6 cents

19. 3 cents from 8 cents

15. 1 cent from 7 cents

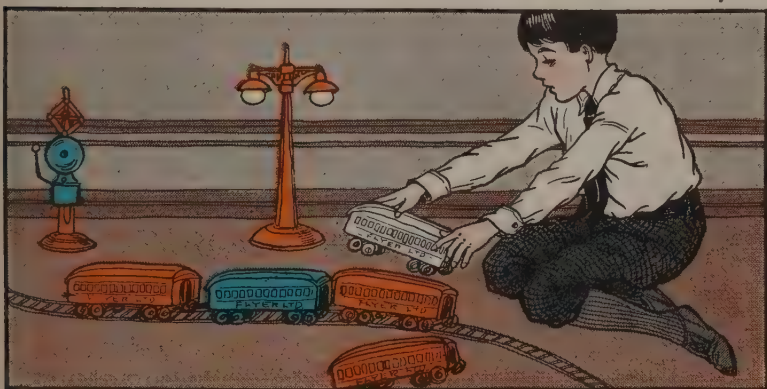
20. 1 cent from 8 cents

You have now worked out twenty number facts. Try to remember these facts, so that you will be able to answer the questions in problems easily and quickly.

Problems

Here are some problems that you should be able to work. You will need to know the same facts to work these problems that you learned with your play money. Be careful. Try to get every answer right.

1. George had 5 cars in his electric train, but he took off 2 cars. How many cars were left in his train?



2. Mr. Smith had 9 horses, but he let his neighbor use 2 horses. How many horses had Mr. Smith left for his own use?

3. Mary had 3 kittens, but 1 of them ran away. How many kittens had she left?

4. I had 5 uncles who lived in the country. Then 1 of my uncles moved to the city. How many of my uncles were left in the country?

5. There were 9 pupils in the third grade of a small school, but 3 of them were promoted to the fourth grade. How many pupils were left in the third grade?

6. Kate invited 9 of her friends to her birthday party, but 4 of them could not come. How many came to Kate's birthday party?

7. If I have 7 dollars and spend 3 dollars for a hat, how many dollars have I left?

8. Eight boys went to the country to fish. A thorn stuck in one boy's foot, and he had to go home. How many boys were left to fish?



9. James had 8 cents, but he spent 4 cents for postage stamps. How many cents had he left?

10. Jack's mother bought 2 pints of milk. Jack and his sister together drank 1 pint at breakfast. How many pints were left?

11. Grace had 9 roses; she gave 1 rose to her father. How many roses had she left?

12. George earned 8 cents, but he spent 2 cents for a pencil. How many cents had he left?

13. Joseph had 6 arrows, but he lost 1 arrow in the woods. How many arrows had he left?

14. William found 7 eggs, but he broke 1 of them. How many eggs were not broken?

15. Mary had 6 cents, but she lost 2 cents. How many cents had she left?



16. Ruth had 4 pet squirrels in a cage, but 2 of them got out. How many squirrels were left in the cage?

17. Mr. Smith had 4 horses, but he sold 1 of them. How many horses had he left?

18. May's tablet had 7 sheets left in it, but her little brother tore out 2 sheets. How many sheets were left then?

19. James saw 6 blackbirds sitting on a fence. Then 3 of them flew away. How many were left?

20. Jack had 8 rabbits in his pens, but he sold 3 of them. How many rabbits did Jack have left?

Writing These Twenty Subtraction Facts Another Way

You have now worked problems containing twenty new number facts. It is important that you should know these twenty facts. If you missed any of the problems, find the facts for those problems in the list on page 40. It is a good thing to study all these facts even if you know them now, so that you can think of them quickly the next time you need them.

Often when one number is to be taken from another, the small number is written under the larger one with a short line under the smaller number.

	1.	2.	3.	4.	5.
(A)	2	4	8	6	6
	1	2	3	2	1
	<u>1</u>	<u>2</u>	<u>5</u>	<u>4</u>	<u>5</u>
(B)	6	3	9	7	9
	3	1	4	1	2
	<u>3</u>	<u>2</u>	<u>5</u>	<u>6</u>	<u>7</u>
(C)	8	7	4	5	9
	1	2	1	2	3
	<u>7</u>	<u>5</u>	<u>3</u>	<u>3</u>	<u>6</u>
(D)	8	9	8	5	7
	4	1	2	1	3
	<u>4</u>	<u>8</u>	<u>6</u>	<u>4</u>	<u>4</u>

Addition Practice

Put a sheet of paper under these examples. Add downward, and write the sums on the paper.

1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
6	8	5	0	9	3	4	1	2	7
<u>2</u>	<u>0</u>	<u>8</u>	<u>0</u>	<u>0</u>	<u>9</u>	<u>0</u>	<u>9</u>	<u>0</u>	<u>0</u>

Some New Words

If we take 2 cents from 5 cents, we get 3 cents. If we take 3 cents from 7 cents, we get 4 cents. Facts like these, where one number is taken from another number, you have probably noticed, are called **subtraction facts**. When we take 2 from 5 and get 3, we **subtract** 2 from 5. When we take 3 from 7 and get 4, we **subtract** 3 from 7. "Subtract" means **take away**.

What is 2 from 5? Since 2 from 5 are 3, 3 is the answer. The answer in subtraction is called the **difference**. The difference between 5 and 2 is 3. The difference between 7 and 3 is 4.

Remember that, to subtract one number from another number, you must take one number away from the other number. Also, remember that the answer you get when you subtract is called the **difference**.

What does "subtract" mean?

What does "difference" mean?

Sixteen New Subtraction Facts

1. Place 9 cents of play money on your desk. Now take away 5 cents. How many cents are left? 9 cents less 5 cents are how many cents? 9 less 5 are how many?

2. Put 8 cents in play money on your desk. Now take away 6 cents. How many cents are left? 8 cents less 6 cents are how many cents? 8 less 6 are how many?

3. Again put 9 cents in play money on your desk. Now take away 7 cents. How many cents are left? 9 cents less 7 cents are how many cents? 9 less 7 are how many?

In the following problems, find how many cents are left:

4. If 2 cents are taken from 3 cents.
5. If 5 cents are taken from 7 cents.
6. If 8 cents are taken from 9 cents.
7. If 3 cents are taken from 4 cents.
8. If 7 cents are taken from 8 cents.
9. If 4 cents are taken from 6 cents.
10. If 6 cents are taken from 9 cents.
11. If 4 cents are taken from 5 cents.
12. If 5 cents are taken from 8 cents.
13. If 6 cents are taken from 7 cents.
14. If 3 cents are taken from 5 cents.
15. If 5 cents are taken from 6 cents.
16. If 4 cents are taken from 7 cents.

Using the Sixteen New Subtraction Facts

In nearly all work, we may make use of what we have studied before in finding out new things. Here is another way to find out how many 5 from 9 are. You have already learned that 4 and 5 are 9, 5 and 4 are 9, and 5 from 9 are 4. From this, can you see how many 4 from 9 are? Do you see that, if 5 from 9 are 4, 4 from 9 are 5? In the same way, if 2 from 8 are 6, 6 from 8 are 2. Can you do some more examples like these? Try them. Think the right answers for the examples at the top of page 43.

	1.	2.	3.
(A)	4 and 5 are _?	4 from 9 are _?	5 from 9 are _?
(B)	2 and 6 are _?	2 from 8 are _?	6 from 8 are _?
(C)	2 and 7 are _?	2 from 9 are _?	7 from 9 are _?
(D)	1 and 2 are _?	1 from 3 are _?	2 from 3 is _?
(E)	2 and 5 are _?	2 from 7 are _?	5 from 7 are _?
(F)	1 and 8 are _?	1 from 9 are _?	8 from 9 is _?
(G)	1 and 3 are _?	1 from 4 are _?	3 from 4 is _?
(H)	1 and 7 are _?	1 from 8 are _?	7 from 8 is _?
(I)	2 and 4 are _?	2 from 6 are _?	4 from 6 are _?
(J)	3 and 6 are _?	3 from 9 are _?	6 from 9 are _?
(K)	1 and 4 are _?	1 from 5 are _?	4 from 5 is _?
(L)	3 and 5 are _?	3 from 8 are _?	5 from 8 are _?
(M)	1 and 6 are _?	1 from 7 are _?	6 from 7 is _?
(N)	2 and 3 are _?	2 from 5 are _?	3 from 5 are _?
(O)	1 and 5 are _?	1 from 6 are _?	5 from 6 is _?
(P)	3 and 4 are _?	3 from 7 are _?	4 from 7 are _?

Writing These Sixteen Subtraction Facts the New Way

Here are the sixteen new subtraction facts you have just worked out. Be sure that you know each one of them.

	1.	2.	3.	4.
(A)	$\begin{array}{r} 9 \\ 5 \\ \hline 4 \end{array}$	$\begin{array}{r} 8 \\ 6 \\ \hline 2 \end{array}$	$\begin{array}{r} 9 \\ 7 \\ \hline 2 \end{array}$	$\begin{array}{r} 3 \\ 2 \\ \hline 1 \end{array}$
(B)	$\begin{array}{r} 7 \\ 5 \\ \hline 2 \end{array}$	$\begin{array}{r} 9 \\ 8 \\ \hline 1 \end{array}$	$\begin{array}{r} 4 \\ 3 \\ \hline 1 \end{array}$	$\begin{array}{r} 8 \\ 7 \\ \hline 1 \end{array}$

Subtraction Facts

	1.	2.	3.	4.
(C)	6 4 <hr/> 2	9 6 <hr/> 3	5 4 <hr/> 1	8 5 <hr/> 3
(D)	7 6 <hr/> 1	5 3 <hr/> 2	6 5 <hr/> 1	7 4 <hr/> 3

Twenty-Five New Subtraction Facts

Here are twenty-five new subtraction facts. Study them till you think you know them.

	1.	2.	3.	4.	5.
(A)	10 1 <hr/> 9	13 4 <hr/> 9	12 3 <hr/> 9	12 6 <hr/> 6	10 5 <hr/> 5
(B)	11 5 <hr/> 6	10 2 <hr/> 8	15 7 <hr/> 8	10 4 <hr/> 6	13 6 <hr/> 7
(C)	14 6 <hr/> 8	12 5 <hr/> 7	11 2 <hr/> 9	17 8 <hr/> 9	11 4 <hr/> 7
(D)	16 7 <hr/> 9	15 6 <hr/> 9	13 5 <hr/> 8	10 3 <hr/> 7	18 9 <hr/> 9
(E)	12 4 <hr/> 8	14 7 <hr/> 7	16 8 <hr/> 8	14 5 <hr/> 9	11 3 <hr/> 8

Twenty New Subtraction Facts

Here are the last twenty subtraction facts. If you know all the subtraction facts that have been given, you will have little trouble with these. If you know that 1 from 10 are 9, it will help you to see that 9 from 10 is 1; also, if you know that 4 from 13 are 9, it will help you to see that 9 from 13 are 4. Study these till you think you know them.

	1.	2.	3.	4.	5.
(A)	$\begin{array}{r} 10 \\ 9 \\ \hline 1 \end{array}$	$\begin{array}{r} 13 \\ 7 \\ \hline 6 \end{array}$	$\begin{array}{r} 10 \\ 8 \\ \hline 2 \end{array}$	$\begin{array}{r} 14 \\ 9 \\ \hline 5 \end{array}$	$\begin{array}{r} 10 \\ 6 \\ \hline 4 \end{array}$
(B)	$\begin{array}{r} 11 \\ 8 \\ \hline 3 \end{array}$	$\begin{array}{r} 11 \\ 9 \\ \hline 2 \end{array}$	$\begin{array}{r} 10 \\ 7 \\ \hline 3 \end{array}$	$\begin{array}{r} 16 \\ 9 \\ \hline 7 \end{array}$	$\begin{array}{r} 14 \\ 8 \\ \hline 6 \end{array}$
(C)	$\begin{array}{r} 17 \\ 9 \\ \hline 8 \end{array}$	$\begin{array}{r} 12 \\ 8 \\ \hline 4 \end{array}$	$\begin{array}{r} 13 \\ 9 \\ \hline 4 \end{array}$	$\begin{array}{r} 11 \\ 7 \\ \hline 4 \end{array}$	$\begin{array}{r} 15 \\ 8 \\ \hline 7 \end{array}$
(D)	$\begin{array}{r} 15 \\ 9 \\ \hline 6 \end{array}$	$\begin{array}{r} 11 \\ 6 \\ \hline 5 \end{array}$	$\begin{array}{r} 13 \\ 8 \\ \hline 5 \end{array}$	$\begin{array}{r} 12 \\ 9 \\ \hline 3 \end{array}$	$\begin{array}{r} 12 \\ 7 \\ \hline 5 \end{array}$

Addition Practice

Put a sheet of paper under row A on page 46. Add downward, and write the sums on the paper. Then fold the top of the sheet down. Place it under row B. Add downward, and write the sums on the folded sheet.

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
(A)	<u>1</u>	<u>0</u>	<u>7</u>	<u>5</u>	<u>2</u>	<u>6</u>	<u>9</u>	<u>3</u>	<u>8</u>	<u>4</u>
	<u>8</u>	<u>1</u>	<u>1</u>	<u>9</u>	<u>1</u>	<u>3</u>	<u>1</u>	<u>8</u>	<u>1</u>	<u>1</u>
(B)	<u>3</u>	<u>8</u>	<u>0</u>	<u>9</u>	<u>1</u>	<u>2</u>	<u>5</u>	<u>6</u>	<u>4</u>	<u>7</u>
	<u>7</u>	<u>2</u>	<u>2</u>	<u>2</u>	<u>7</u>	<u>2</u>	<u>6</u>	<u>1</u>	<u>4</u>	<u>2</u>

Finding How Many More



1. There is a top in this store that costs 15 cents. Tom wants the top very much, but he has only 9 cents. How many more cents does Tom need so that he can buy the top?

9 and how many more are 15? 9 and 6 more are how many?

You have already studied a great many addition facts. You can use these facts to help you answer many questions. You know that 9 and 6 are 15. From this, it is easy to answer the question, 9 and how many more are 15? The answer is ___?___.

Then, Tom needs 6 cents more.

Now see if you can work these problems.

2. George has saved 8 cents. He wishes to save 12 cents. How much more must he save?

3. Jack, Frank, Henry, and Robert are going to play with Tom this afternoon. Tom has 3 peaches. He wishes to have one peach for each of the 5 boys. How many more peaches must Tom pick?

4. Kate wants 8 dresses for her doll. She has made 5 of the dresses. How many more dresses does Kate have to make?

5. Billy has 7 subtraction examples to work. He has already worked 4 of them. How many more has he to do?

6. There are 17 pages in the first chapter of Alice's story book. Alice has read 9 pages. How many more pages has Alice to read before she will finish the first chapter?

7. Ruth's father runs a store. At noon he said he had 12 business letters to write. In the evening he said he had written 5 of them. How many more had he to write?

Number Facts Telling How Many More

Here are the facts you need to know to answer questions like those in the problems you have just solved. Think the right answers for these:

8 and 6 are $\underline{\quad}?$ —

8 and $\underline{\quad}?$ — are 14

7 and 2 are $\underline{\quad}?$ —

7 and $\underline{\quad}?$ — are 9

9 and 3 are $\underline{\quad}?$ —

9 and $\underline{\quad}?$ — are 12

6 and 7 are $\underline{\quad}?$ —

6 and $\underline{\quad}?$ — are 13

8 and 3 are $\underline{\quad}?$ —

8 and $\underline{\quad}?$ — are 11

$1+2=___?$	$1+___?=3$	$1+8=___?$	$1+___?=9$
$0+3=___?$	$0+___?=3$	$4+0=___?$	$4+___?=4$
$9+2=___?$	$9+___?=11$	$7+7=___?$	$7+___?=14$
$7+8=___?$	$7+___?=15$	$4+8=___?$	$4+___?=12$
$5+2=___?$	$5+___?=7$	$7+9=___?$	$7+___?=16$

4 and how many more are 10?

9 and how many more are 17?

8 and how many more are 12?

3 and how many more are 4?

6 and how many more are 8?

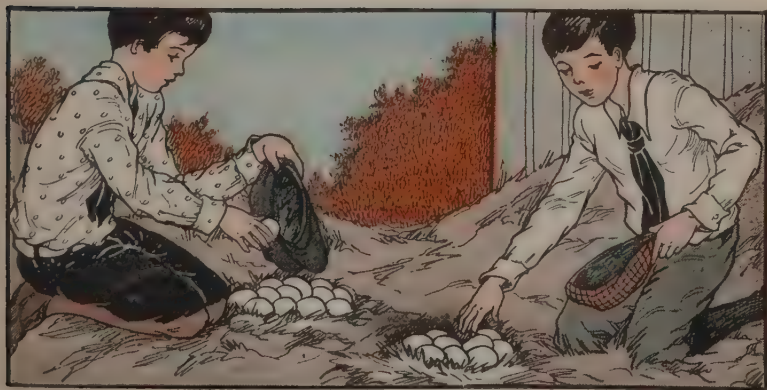
$7+___?=7$	$8+___?=10$	$6+___?=6$	$3+___?=10$
$5+___?=13$	$0+___?=7$	$5+___?=6$	$7+___?=13$
$8+___?=9$	$2+___?=10$	$4+___?=7$	$9+___?=10$
$8+___?=17$	$4+___?=6$	$0+___?=2$	$4+___?=5$
$2+___?=6$	$5+___?=14$	$9+___?=9$	$6+___?=7$
$6+___?=12$	$5+___?=8$	$2+___?=8$	$8+___?=15$
$3+___?=8$	$0+___?=8$	$6+___?=14$	$0+___?=9$
$3+___?=11$	$3+___?=9$	$2+___?=9$	$4+___?=13$
$6+___?=9$	$9+___?=16$	$4+___?=8$	$7+___?=12$
$5+___?=10$	$5+___?=9$	$0+___?=0$	$3+___?=3$
$6+___?=11$	$8+___?=8$	$2+___?=7$	$5+___?=5$
$5+___?=12$	$2+___?=3$	$8+___?=16$	$0+___?=6$
$1+___?=4$	$2+___?=4$	$9+___?=15$	$6+___?=15$
$6+___?=10$	$1+___?=7$	$3+___?=5$	$9+___?=18$
$1+___?=5$	$4+___?=9$	$3+___?=7$	$3+___?=6$
$1+___?=8$	$1+___?=10$	$1+___?=6$	$2+___?=5$
$1+___?=2$	$4+___?=11$	$7+___?=10$	$7+___?=11$
$0+___?=5$	$1+___?=1$	$0+___?=4$	$2+___?=11$
$2+___?=2$	$5+___?=11$	$7+___?=8$	$9+___?=14$
$9+___?=13$	$3+___?=12$	$0+___?=1$	$8+___?=13$

Addition Practice

Put a sheet of paper under row A. Add, and write the sums on the paper. Then fold the top of the sheet down and write the sums for row B. Then fold the sheet down again and write the sums for row C.

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
(A)	5	8	3	0	6	9	2	8	4	7
	<u>7</u>	<u>3</u>	<u>6</u>	<u>3</u>	<u>4</u>	<u>3</u>	<u>3</u>	<u>4</u>	<u>2</u>	<u>3</u>
(B)	9	3	7	1	4	5	1	0	6	2
	<u>4</u>	<u>5</u>	<u>4</u>	<u>5</u>	<u>3</u>	<u>4</u>	<u>6</u>	<u>4</u>	<u>0</u>	<u>4</u>
(C)	9	7	6	5	3	0	1	2	4	8
	<u>5</u>	<u>5</u>	<u>9</u>	<u>5</u>	<u>4</u>	<u>5</u>	<u>4</u>	<u>5</u>	<u>7</u>	<u>5</u>

How Many More, How Many Less



1. Dick and Will were out hunting eggs. Dick found 13 eggs, and Will found 9 eggs. Who found more eggs? How many more?

9 and 4 more are how many?

9 and how many more are 13?

You have learned in addition that 9 and 4 are 13. Then it is easy to answer the question, 9 and how many more are 13? The answer is 4. Then, Dick found 4 more eggs than Will.

2. If Dick found 13 eggs and Will found 9 eggs, how many eggs less than Dick did Will find?

13 less 9 are how many?

13 less how many are 9?

You have already learned that 13 less 9 are 4. Then it is easy to answer the question, 13 less how many are 9? The answer is 4. Then, Will found 4 eggs less than Dick.

From this problem you see that we may say these things two ways. We may say:

13 is 4 more than 9; or

9 is 4 less than 13.

They really mean the same thing. To find that 13 is 4 more than 9, or that 9 is 4 less than 13, we **subtract** 9 from 13. This gives 4. We do this to find out how many more 13 is than 9, or how many less 9 is than 13. Remember that, to answer questions like these, you subtract.

Here are some more problems for you to try.

3. There are 5 kittens with my white cat and 3 kittens with my black cat. How many more kittens are with my white cat than with my black cat?

4. Arthur and Edward were hunting Easter eggs. Arthur found 7 Easter eggs, and Edward found 12

Easter eggs. The number of Easter eggs that Arthur found is how many less than the number of eggs Edward found?

5. John is 11 years old, and his sister is 6 years old. How many years older is John than his sister?

6. Mary and Jane took 7 apples to school, and all but 3 of them were eaten. How many apples were eaten? (7 less how many are 3?)

7. George is 7 years old, and his brother is 9 years old. How many years younger is George than his brother?

8. William had 9 rows of potatoes to dig, and he dug all of them but 3 rows. How many rows did he dig?

9. Betty had a box with 8 colored pencils in it. She dropped the box, and all but 3 pencils fell out. How many pencils fell out?

A New Word and Sign

You have already learned the meaning of $+$ and $=$. The sign $+$ is the sign of addition, and the sign $=$ means "is" or "are."

Here is a new sign: $-$. The sign $-$ is called **minus**, and means **less**. It is the sign of subtraction. When you see the sign $-$ between two numbers, you are to subtract the second number from the first number. Thus, $7 - 3 = 4$, or 7, means that 3 taken from 7

$$\begin{array}{r} - 3 \\ \hline 4 \end{array}$$

equals 4, or 7 less 3 are 4.

You may have already noticed that we can say subtraction facts two ways. We can say 2 from 5 are 3; or we can say 5 less 2 are 3. They both mean the same thing. If you are not sure about this, put 5 cents of play money on your desk and take away 2 cents.

2 cents from 5 cents are 3 cents.

5 cents less 2 cents are 3 cents.

If we use signs, 5 less 2 are 3 may be written thus: $5 - 2 = 3$. Write these facts, using the signs:

5 less 1 are 4

15 less 8 are 7

8 less 2 are 6

17 less 9 are 8

7 less 2 are 5

13 less 6 are 7

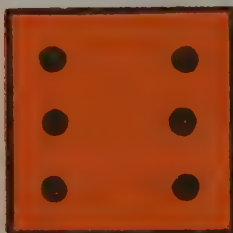
18 less 9 are 9

16 less 7 are 9

Using Zero in Subtraction



Square A



Square B



Square C

How many dots are there in square A?

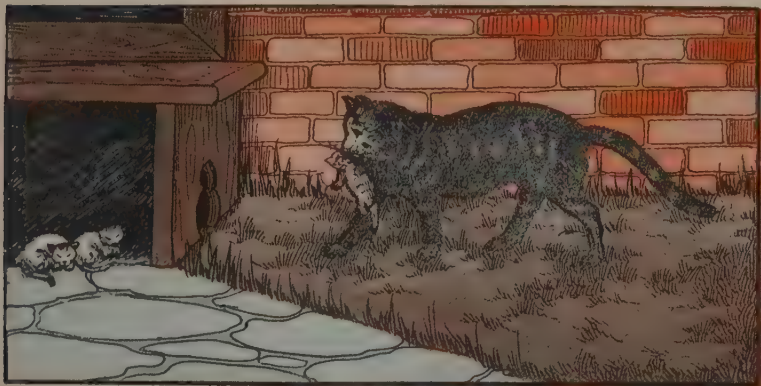
How many dots are there in square B?

How many dots are there in square C?

You see that there are four dots in square A and six dots in square B, and that there are **not any** dots in square C.

Remember, 0 means not any, or no.

Tabby lived with her three kittens in an old barn. One day Tabby found a warm place under a porch which she thought would make a fine new home. So



the next morning Tabby carried the three kittens to their new home under the porch. How many kittens did Tabby leave in the barn?

Did Tabby really leave any kittens in the barn at all? No, she did not. We may say this fact in two ways:

Tabby did not leave any of her kittens in the old barn.

Tabby left no kittens in the barn.

$\begin{array}{r} 3 \text{ kittens in barn} \\ 3 \text{ kittens carried to porch} \\ \hline 0 \text{ kitten left in barn} \end{array}$
--

If you had 6 cents and spent 6 of them, how many cents would you have left?

Would you really have any cents left at all? No, you would not.

Had	6 cents
Spent	6 cents
Had	$\overline{0}$ cent left

If you had 4 pieces of candy and ate all 4 of them, how many pieces of candy would you have left?

Had	4 pieces of candy
Ate	$\overline{4}$ pieces of candy
Had	$\overline{0}$ piece of candy left

Can you make up some problems like these? Try it.

Do you see that, when we take one number away from another number just like it, the difference is always 0?

What is 7 from 7, 1 from 1, 5 from 5, 2 from 2, 9 from 9, 3 from 3, 4 from 4, 6 from 6, 8 from 8?

If we take 2 from 3, what is left?

If we take 1 from 3, what is left?

If we take 0 from 3, what is left?

If we take 0 from 3, have we really taken anything from the 3? Is the 3 changed at all?

From this, do you see that 0 from 3 are 3? In the same way, 0 from 7 are 7, 0 from 4 are 4.

Did you notice that 0 taken from any number leaves the number itself?

How many are: 0 from 5, 0 from 1, 0 from 6, 0 from 0, 0 from 2, 0 from 8, 0 from 3, 0 from 9, 0 from 4, 0 from 7?

Think the differences for these:

0 from 3	0 from 4	1 from 1
4 from 4	3 from 3	9 from 9
7 from 7	0 from 2	0 from 0
0 from 6	8 from 8	2 from 2
0 from 1	0 from 9	0 from 5
5 from 5	6 from 6	0 from 8
	0 from 7	

Subtraction Problems with Zeros

Here are some subtraction problems containing zeros. Be careful to get them right. Just remember that, when you subtract a number from a number just like it, the difference is always 0. And remember that, when you subtract 0 from a number, the difference is the same as the number itself.

1. If 3 dollars is all I have and I spend 3 dollars for a hat, how many dollars shall I have left?

2. Mary had 4 kittens, but 4 of them ran away. How many kittens had Mary left?

3. Kate's father had 7 cows. One day Kate's father thought that he would sell some of them. Later, though, he changed his mind and sold no cows. How many cows did Kate's father have left?

4. Nine sheep were in a pen, but 9 sheep jumped out. How many sheep were left in the pen?

5. George's uncle had 8 horses, but he sold 8 of them. How many horses did George's uncle have left?

Subtraction Practice

Here are some questions about the subtraction facts that you need to know. Study these questions till you think you can answer them.

1. How much more is 12 than 4?
2. How much more is 14 than 7?
3. How much more is 11 than 6?
4. How much more is 8 than 8?
5. How much more is 7 than 3?
6. How much less is 6 than 13?
7. How much less is 3 than 10?
8. How much less is 2 than 11?
9. How much less is 0 than 2?
10. How much less is 3 than 8?
11. How much more than 1 is 9?
12. How much more than 9 is 18?
13. How much more than 3 is 11?
14. How much more than 4 is 8?
15. How much more than 2 is 7?
16. How much less than 9 is 2?
17. How much less than 4 is 1?
18. How much less than 11 is 5?
19. How much less than 7 is 1?
20. How much less than 14 is 9?

More Subtraction Practice

Think the differences for these:

1.**2.**

-
- (A) 15 is ___?___ more than 7 7 is ___?___ less than 12
(B) 14 is ___?___ more than 8 1 is ___?___ less than 10

1.

2.

- (C) 11 is $_\? _\$ more than 4 8 is $_\? _\$ less than 12
 (D) 12 is $_\? _\$ more than 5 9 is $_\? _\$ less than 13
 (E) 9 is $_\? _\$ more than 7 2 is $_\? _\$ less than 6
 (F) 8 less $_\? _\$ = 2 15 minus $_\? _\$ = 8
 (G) 9 less $_\? _\$ = 0 8 minus $_\? _\$ = 1
 (H) 13 less $_\? _\$ = 7 12 minus $_\? _\$ = 3
 (I) 1 less $_\? _\$ = 1 15 minus $_\? _\$ = 6
 (J) 17 less $_\? _\$ = 8 2 minus $_\? _\$ = 1

1.

2.

3.

- (K) $8 - _\? = 0$ $12 - 6 = _\?$ 0 from 1 = $_\?$
 (L) $13 - _\? = 5$ $17 - 9 = _\?$ 1 from 5 = $_\?$
 (M) $4 - _\? = 4$ $11 - 9 = _\?$ 5 from 14 = $_\?$
 (N) $4 - _\? = 0$ $0 - 0 = _\?$ 8 from 11 = $_\?$
 (O) $8 - _\? = 3$ $3 - 2 = _\?$ 9 from 10 = $_\?$

Subtract:

1. 2. 3. 4. 5. 6. 7. 8. 9. 10.

- (P) $\begin{array}{r} 9 \\ 4 \\ \hline \end{array}$ $\begin{array}{r} 3 \\ 1 \\ \hline \end{array}$ $\begin{array}{r} 16 \\ 9 \\ \hline \end{array}$ $\begin{array}{r} 6 \\ 6 \\ \hline \end{array}$ $\begin{array}{r} 7 \\ 5 \\ \hline \end{array}$ $\begin{array}{r} 3 \\ 3 \\ \hline \end{array}$ $\begin{array}{r} 13 \\ 4 \\ \hline \end{array}$ $\begin{array}{r} 5 \\ 2 \\ \hline \end{array}$ $\begin{array}{r} 10 \\ 6 \\ \hline \end{array}$ $\begin{array}{r} 9 \\ 8 \\ \hline \end{array}$
 (Q) $\begin{array}{r} 14 \\ 6 \\ \hline \end{array}$ $\begin{array}{r} 9 \\ 9 \\ \hline \end{array}$ $\begin{array}{r} 5 \\ 0 \\ \hline \end{array}$ $\begin{array}{r} 4 \\ 3 \\ \hline \end{array}$ $\begin{array}{r} 8 \\ 7 \\ \hline \end{array}$ $\begin{array}{r} 12 \\ 9 \\ \hline \end{array}$ $\begin{array}{r} 8 \\ 5 \\ \hline \end{array}$ $\begin{array}{r} 10 \\ 8 \\ \hline \end{array}$ $\begin{array}{r} 5 \\ 3 \\ \hline \end{array}$ $\begin{array}{r} 7 \\ 6 \\ \hline \end{array}$
 (R) $\begin{array}{r} 16 \\ ? \\ \hline \end{array}$ $\begin{array}{r} 10 \\ ? \\ \hline \end{array}$ $\begin{array}{r} 2 \\ ? \\ \hline \end{array}$ $\begin{array}{r} 15 \\ ? \\ \hline \end{array}$ $\begin{array}{r} 16 \\ ? \\ \hline \end{array}$ $\begin{array}{r} 6 \\ ? \\ \hline \end{array}$ $\begin{array}{r} 9 \\ ? \\ \hline \end{array}$ $\begin{array}{r} 10 \\ ? \\ \hline \end{array}$ $\begin{array}{r} 3 \\ ? \\ \hline \end{array}$ $\begin{array}{r} 6 \\ ? \\ \hline \end{array}$
 8 5 2 9 7 4 5 7 0 1

Addition Practice

Add, and write the sums for these examples on a folded paper.

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
(A)	$\begin{array}{r} 9 \\ 6 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ 3 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ 6 \\ \hline \end{array}$	$\begin{array}{r} 1 \\ 2 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ 6 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ 3 \\ \hline \end{array}$	$\begin{array}{r} 0 \\ 6 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ 5 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ 6 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ 7 \\ \hline \end{array}$
(B)	$\begin{array}{r} 6 \\ 5 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ 7 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ 6 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ 0 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ 7 \\ \hline \end{array}$	$\begin{array}{r} 1 \\ 3 \\ \hline \end{array}$	$\begin{array}{r} 0 \\ 7 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ 2 \\ \hline \end{array}$	$\begin{array}{r} 0 \\ 9 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ 7 \\ \hline \end{array}$
(C)	$\begin{array}{r} 9 \\ 8 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ 7 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ 8 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ 2 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ 8 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ 9 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ 1 \\ \hline \end{array}$	$\begin{array}{r} 0 \\ 8 \\ \hline \end{array}$	$\begin{array}{r} 1 \\ 1 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ 8 \\ \hline \end{array}$
(D)	$\begin{array}{r} 9 \\ 9 \\ \hline \end{array}$	$\begin{array}{r} 1 \\ 0 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ 9 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ 1 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ 8 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ 0 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ 8 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ 9 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ 6 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ 9 \\ \hline \end{array}$

Subtraction Review

- How much more is 4 than 2?
- How much less than 10 is 2?
- 6 is ? more than 0.
- 7 is ? less than 11.
- 7 less ? = 7.
- 7 minus ? = 4.
- $5 - \underline{\quad?} = 5$
- $8 - 6 = \underline{\quad?}$
- 8 from 13 = ? .
- 0 subtracted from 7 equals ? .
- $$\begin{array}{r} 5 \\ - 4 \\ \hline \end{array}$$
- $$\begin{array}{r} 9 \\ - ? \\ \hline 6 \end{array}$$
- 6 is how much less than 15?

How to Work Problems

When you work a problem, there are several things you should do.

1. Read the problem through very carefully to see what it tells you. If you do not understand the problem, read it again.

2. See what the problem asks you to find.

3. Decide whether to add or subtract the numbers.

4. Add or subtract as you decide.

In working each of the following problems, be sure you know whether to add or subtract before you put down any work. Ask yourself these questions:

What does the problem tell me?

What does it ask me to find?

How can I find the answer?

Problems

1. James had 6 red marbles and 1 yellow marble. He put all his marbles into a bag. Find how many marbles James put into the bag.

What does this problem tell you?

What does it ask you to find?

Should you add or subtract to find the answer?

2. Mary copied 7 verses of a poem and then tore up 3 of them. How many verses were left?

3. A basket-ball player threw 7 goals in one game and 5 goals in another game. How many goals did he throw in both games?

4. Henry had 5 puppies, but he gave 3 of them to his playmates. How many puppies did Henry have left?



5. Kate has 5 dolls with light hair and 4 dolls with dark hair. Find how many dolls Kate has all together.

6. Grace cut off 1 of her curls, and then her mother cut off her 6 other curls. How many curls were cut off?

7. Charles had 9 cents in his bank, and he put in 7 more cents. How many cents were there in Charles's bank then?

8. Tom had 9 cents for spending money, but he bought some peanuts for 5 cents. How many cents had he left?

9. Harry had 7 pieces of candy, but his little brother ate 4 of them. How many pieces of candy did Harry have left?

10. Nine boys were playing "run sheep run." Five more boys came and played with them. How many boys were playing "run sheep run" then?

11. Edward worked 6 problems, and George worked 7 other problems. How many problems did both of them work in all?

12. Ruth had 7 goldfish, but 2 of them died. How many goldfish did Ruth have left?

Days and Weeks

1. You have already learned that there are seven days in a week. The names of the days of the week, you know, are Sunday, Monday, Tuesday, Wednesday, Thursday, Friday, and Saturday. Sunday is the first day of the week; Monday is the second day; Tuesday is the third day; Wednesday is the fourth day; Thursday is the fifth day; Friday is the sixth day; and Saturday is the seventh day.

$$7 \text{ days} = 1 \text{ week}$$

2. Most boys and girls go to school on Monday, Tuesday, Wednesday, Thursday, and Friday. Five days make one school week.

$$5 \text{ days} = 1 \text{ school week}$$

3. The mailman delivers mail on Monday, Tuesday, Wednesday, Thursday, Friday, and Saturday. Six days make a working week.

$$6 \text{ days} = 1 \text{ working week}$$

Problems

1. George was ill on Wednesday and Thursday of one school week and did not go to school. How many days did George go to school that week if there were no holidays?

2. One week it rained 4 days. Another week it rained 3 days. How many days did it rain in these two weeks together?

3. Mr. Smith was out of town 2 days one week and did not work. How many days did Mr. Smith work that week?

4. One week this fall we had 3 days' vacation from school. How many days did we go to school that week?

5. Last Thursday was a holiday, and the mailman did not deliver the mail that day. How many days did he deliver mail last week?

6. One week in March it snowed on Monday, Tuesday, Wednesday, and Saturday. On how many days did it not snow?

7. John walked 2 miles on Friday and 7 miles on Saturday. How many miles did John walk on both days?

8. Richard helped his mother for 3 days one week, and his mother told him that he might visit his cousin in the country for the rest of the week. How many days did Richard have for visiting his cousin in the country?

9. William went to school 5 days one week, and Thomas went to school 1 day less than William. How many days did Thomas go to school?

General Practice 1

Write the answers for these examples on a sheet of paper. Time allowed: 4 minutes.

1.	2.	3.	4.
$3 + 9 =$	Subtract:	0 and 0 are	0 from 8 are
	10		
	<u>2</u>		
5.	6.	7.	8.
Find the difference between 7 and 4.	Add:	$12 - 6 =$	4 plus 0 =
	5		
	<u>8</u>		
9.	10.	11.	12.
Add 6 and 2.	9 less 4 are	Find the sum of 8 and 0.	$9 - 7 =$

The 100 Subtraction Facts

Here are the one hundred most important combinations you need to know in subtraction. If you do not know some of them, study them. A good way to study them is to put a piece of paper under the ones you want to learn and write the answers till you know them.

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
(A)	8	9	9	7	10	12	8	10	8	3
	<u>0</u>	<u>4</u>	<u>7</u>	<u>4</u>	<u>2</u>	<u>6</u>	<u>3</u>	<u>7</u>	<u>6</u>	<u>1</u>
(B)	6	8	10	11	5	9	7	13	6	11
	<u>1</u>	<u>4</u>	<u>3</u>	<u>7</u>	<u>5</u>	<u>8</u>	<u>5</u>	<u>9</u>	<u>4</u>	<u>5</u>

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
(C)	11 <u>2</u>	6 <u>3</u>	7 <u>7</u>	12 <u>3</u>	9 <u>3</u>	5 <u>4</u>	10 <u>6</u>	2 <u>1</u>	9 <u>2</u>	8 <u>5</u>
(D)	15 <u>6</u>	5 <u>1</u>	8 <u>2</u>	1 <u>0</u>	13 <u>6</u>	10 <u>1</u>	6 <u>2</u>	9 <u>9</u>	7 <u>2</u>	12 <u>9</u>
(E)	13 <u>8</u>	9 <u>6</u>	3 <u>0</u>	8 <u>1</u>	11 <u>3</u>	14 <u>7</u>	10 <u>4</u>	4 <u>3</u>	5 <u>0</u>	15 <u>9</u>
(F)	6 <u>6</u>	11 <u>9</u>	12 <u>7</u>	9 <u>0</u>	14 <u>6</u>	2 <u>2</u>	9 <u>5</u>	16 <u>8</u>	1 <u>1</u>	13 <u>7</u>
(G)	10 <u>5</u>	4 <u>0</u>	9 <u>1</u>	15 <u>7</u>	4 <u>4</u>	14 <u>9</u>	0 <u>0</u>	6 <u>5</u>	18 <u>9</u>	12 <u>4</u>
(H)	16 <u>9</u>	12 <u>5</u>	6 <u>0</u>	11 <u>6</u>	10 <u>8</u>	16 <u>7</u>	5 <u>3</u>	13 <u>4</u>	7 <u>6</u>	11 <u>8</u>
(I)	10 <u>9</u>	3 <u>3</u>	17 <u>9</u>	17 <u>8</u>	4 <u>2</u>	7 <u>0</u>	14 <u>5</u>	5 <u>2</u>	15 <u>8</u>	7 <u>3</u>
(J)	8 <u>8</u>	13 <u>5</u>	7 <u>1</u>	11 <u>4</u>	12 <u>8</u>	3 <u>2</u>	4 <u>1</u>	14 <u>8</u>	8 <u>7</u>	2 <u>0</u>

Review of Some Important Words and a Sign

Here are some words and a sign in arithmetic. You will use these often. Be sure you know the meaning of each of them.

Difference The answer to a subtraction problem.
What is left after subtracting.

Minus sign	The name of the sign $-$, which is the sign of subtraction.
—	Minus. The sign of subtraction.
School week	Five days.
Subtract	To take away.
Subtraction	Taking one number from another number. Finding the difference between two numbers. Finding how much larger or how much smaller one number is than another.
Week	Seven days.
Working week	Six days.

Review

Here is a review of what you have been studying. Write the numbers 1 to 12 on a sheet of paper. After each number you have written, write the answer to the question that has the same number.

At the end of each question you will see a page number. If you missed any part of the test, turn back to the page number given after that part of the test, where you will find how to answer what you missed. Study what you missed until you are sure you know what to do. Then go back to the review and again try the part you missed. Do this until you do not miss anything or until your teacher tells you to work on something else.

1. How many are 9 minus 7? (Page 43)
2. Eight less four are how many? (Page 40)
3. What does "subtract" mean? (Page 41)

4. What does "difference" mean? (Page 41)
5. What does "take away" mean? (Page 41)
6. What does "take from" mean? (Page 41)
7. What does "minus" mean? (Page 51)
8. What does $-$ mean? (Page 51)
9. Is $6 - 0$ larger than $7 - 1$? (Pages 40 and 55)
10. Is $0 - 0$ larger than $6 - 6$? (Pages 54 and 55)
11. Is $11 - 7$ less than $10 - 6$? (Page 45)
12. What is the difference between any number and zero? (Page 54)

CHAPTER IV

ADDING COLUMNS

Adding Three Numbers



Kate and Grace colored some Easter eggs. Kate colored 3 eggs orange and 2 eggs blue and striped 1 egg. Grace colored 4 eggs orange and 3 eggs blue and striped 2 eggs.

Kate: Grace, do you know how many colored eggs you have all together?

Grace: No, I don't. Do you know how many you have?

Kate: No, but I believe I can find out. I have 3 orange eggs, 2 blue eggs, and 1 striped egg. Now, let's see.

3 and 2 are 5, and 1 are 6. That's right. I have 6 colored eggs for Easter. Now see how many you have.

KATE	GRACE
3	4
2	3
1	2
<hr/> 6	<hr/> 9

Grace: Well, I have 4 orange eggs, 3 blue eggs, and 2 striped eggs. 4 and 3 are 7, and 2 are 9. I have 9 colored eggs for Easter.

Do you think you can add three numbers as Kate and Grace did? It is not hard. It is really easy if you will be careful to put one number under another in a column. Then, beginning at the top of the column, add the first two numbers, and to this sum add the third number. Then draw a short line and write the sum under the line in the column. See if you can work the problems in the next lesson in this way.

Problems

1. John lives on a farm. He has 1 pig, 4 sheep,
 1 and 3 goats. How many animals has John?
 4 Write the numbers in a column.
 3 Think, "1 and 4 are 5, and 3 are 8."
 3
 8 Write 8.

2. Tom had three bags of marbles. He had in these bags 3 marbles, 2 marbles, and 3 marbles. If Tom put all the marbles into one bag, how many marbles were in that bag then?

3. Alice mailed three letters. On one she paid 2 cents for postage, on another 4 cents, and on the third 2 cents. How many cents did Alice spend for postage all together?

4. There are several boys on the playground. Four boys are playing ball, 2 are running, and 3 are playing marbles. How many boys are on the playground?

5. Dan went fishing with his father and his uncle. His father caught 5 fish while his uncle caught 4 fish. Dan had poor luck and did not catch any fish. If all the fish were put on the same string, how many fish would there be on the string?

6. George had 2 cents in his bank, and he put in 2 more cents. Then his father put in 5 cents. How many cents were in the bank all together?

Proving Addition

In all your work with numbers, it is very important that you learn how to find whether you have made any mistakes or not. That is, you ought to **prove** your work. See how the following example is worked and proved.

Add 4, 2, and 3, and prove.

WORK	1. Begin at the top and add downward.
4	Think, "4 and 2 are 6."
2	Then think, "and 3 are 9."
3	Write 9.
<hr/> 9	

2. Now, to be sure you are right, begin at the bottom and add upward.

PROOF	Think, "3 and 2 are 5."
4	Then think, "and 4 are 9."
2	Since you get 9 adding either way, you
3	may be sure you have the right sum.
<hr/> 9	

3. After adding an example downward you can prove it by adding upward. When you are told to prove an

example in addition, after you have begun at the top and added downward, you should begin at the bottom and add upward. From now on you will be asked to prove many examples in addition. If your two sums are not the same, add in both directions again until both your sums are the same.

Addition Practice

Add downward, and write the sums for these examples on a folded paper. Prove by adding upward.

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
(A)	3	4	6	0	1	2	0	6	2	5
	3	1	2	4	4	0	0	1	4	0
	2	3	1	3	1	7	8	2	3	3
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
(B)	1	2	3	2	3	4	3	2	4	1
	4	4	2	3	1	2	0	1	2	3
	4	3	3	3	1	2	4	2	1	1
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>

Think the sums for these:

	1.	2.	3.
(C)	$0+5+4 = _? _$	$4+4+1 = _? _$	$3+2+1 = _? _$
(D)	$3+1+2 = _? _$	$5+2+1 = _? _$	$5+1+2 = _? _$
(E)	$3+4+2 = _? _$	$6+1+1 = _? _$	$7+0+2 = _? _$
(F)	$3+0+5 = _? _$	$4+3+2 = _? _$	$2+1+4 = _? _$

Subtraction Practice

Subtract, and write the differences on a folded paper.

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
(A)	10 <u>2</u>	9 <u>4</u>	8 <u>3</u>	12 <u>6</u>	3 <u>1</u>	8 <u>0</u>	10 <u>7</u>	9 <u>7</u>	8 <u>6</u>	7 <u>4</u>
(B)	6 <u>1</u>	7 <u>5</u>	8 <u>4</u>	9 <u>8</u>	10 <u>3</u>	13 <u>9</u>	11 <u>7</u>	6 <u>4</u>	5 <u>5</u>	11 <u>5</u>
(C)	5 <u>4</u>	11 <u>2</u>	10 <u>6</u>	6 <u>3</u>	2 <u>1</u>	7 <u>7</u>	9 <u>2</u>	12 <u>3</u>	8 <u>5</u>	9 <u>3</u>
(D)	15 <u>6</u>	6 <u>2</u>	5 <u>1</u>	9 <u>9</u>	8 <u>2</u>	10 <u>1</u>	1 <u>0</u>	7 <u>2</u>	13 <u>6</u>	12 <u>9</u>
(E)	13 <u>8</u>	10 <u>4</u>	9 <u>6</u>	4 <u>3</u>	3 <u>0</u>	15 <u>9</u>	8 <u>1</u>	5 <u>0</u>	11 <u>3</u>	14 <u>7</u>

Adding Longer Columns

Do you think you can add some longer columns? Try those on page 72. Put a sheet of paper under the examples and write the sums on the paper. Be sure to add downward. In adding the first example, think, "3 and 2 are 5, and 0 are 5, and 4 are 9." Prove by adding upward. In proving the first example, think, "4 and 0 are 4, and 2 are 6, and 3 are 9."

1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
	1				1	1			2
3	2	2	0	1	2	1	4	3	0
2	1	0	3	1	1	3	2	1	1
0	3	1	2	4	4	2	1	2	3
4	2	4	3	2	1	2	0	1	3

Adding by Endings

Add:

4	14	24	34	44
3	3	3	3	3
<u>7</u>	<u>17</u>	<u>27</u>	<u>37</u>	<u>47</u>

Are all these sums right?

How many are 4 and 3?

When you added 14 and 3, what did you get?

Does it seem to you that, if 4 and 3 are 7, 14 and 3 are 17?

When you added 24 and 3, what did you get?

If 4 and 3 are 7, are 24 and 3, 27?

When you added 44 and 3, what did you get?

If 4 and 3 are 7, is it easy to see that 44 and 3 are 47?

4 and 3 are 7

14 and 3 are 17 24 and 3 are 27 34 and 3 are 37
 44 and 3 are 47

If you add 3 to a number ending in 4, the sum always ends in 7.

How many are 4 and 3? 34 and 3? 24 and 3? 44 and 3? 74 and 3? 54 and 3? 94 and 3? 64 and 3? 14 and 3? 84 and 3?

Add:

4	14	24	34	44
5	5	5	5	5
<hr/> 9	<hr/> 19	<hr/> 29	<hr/> 39	<hr/> 49

Are the sums above right?

How many are 4 and 5? 14 and 5? 24 and 5? 34 and 5? 44 and 5?

If you add 5 to a number ending in 4, with what figure will the answer always end?

How many are 2 and 6? 12 and 6? 22 and 6? 32 and 6?

If you add 6 to a number ending in 2, with what figure will the answer always end?

Think the sums for these:

	1.	2.	3.
(A)	0 and 1 are 1	0 and 2 are 2	0 and 3 are _?
(B)	10 and 1 are 11	10 and 2 are _?	10 and 3 are _?
(C)	20 and 1 are _?	20 and 2 are _?	20 and 3 are _?
(D)	30 and 1 are _?	30 and 2 are _?	30 and 3 are _?
(E)	40 and 1 are _?	40 and 2 are _?	40 and 3 are _?

In the same way, add 0 to each of the numbers 0, 10, 20, 30, and 40; add 4 to each of the numbers 0, 10, 20, 30, and 40; then add 5 to each of the numbers 0, 10, 20, 30, and 40.

Now add 6 to each of the numbers 0, 10, 20, 30, and 40, thinking, "0 and 6 are 6, 10 and 6 are 16, 20 and 6 are 26," and so on.

Now add 7 to each of the numbers 0, 10, 20, 30, and 40 in the same way.

Then add 8 to each of the numbers 0, 10, 20, 30, and 40 in the same way.

Then add 9 to each of the numbers 0, 10, 20, 30, and 40 in the same way.

Think the sums if you add each of the numbers 0, 1, 2, 3, 4, 5, 6, 7, or 8 to each of the numbers 1, 11, 21, 31, or 41.

Think the sums if you add 0, 1, 2, 3, 4, 5, 6, or 7 to each of the numbers 2, 12, 22, 32, or 42.

Think the sums if you add 0, 1, 2, 3, 4, 5, or 6 to 3, 13, 23, 33, or 43.

Can you make up some examples like these? Tell your teacher if you can. Write them, work them, and show them to her.

Addition Practice

Think the sums for these:

	1.	2.	3.	4.	5.	6.
(A)	$\begin{array}{r} 4 \\ 0 \\ \hline \end{array}$	$\begin{array}{r} 14 \\ 2 \\ \hline \end{array}$	$\begin{array}{r} 24 \\ 4 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ 1 \\ \hline \end{array}$	$\begin{array}{r} 14 \\ 3 \\ \hline \end{array}$	$\begin{array}{r} 24 \\ 5 \\ \hline \end{array}$
(B)	$\begin{array}{r} 34 \\ 3 \\ \hline \end{array}$	$\begin{array}{r} 14 \\ 0 \\ \hline \end{array}$	$\begin{array}{r} 24 \\ 2 \\ \hline \end{array}$	$\begin{array}{r} 34 \\ 4 \\ \hline \end{array}$	$\begin{array}{r} 14 \\ 1 \\ \hline \end{array}$	$\begin{array}{r} 24 \\ 3 \\ \hline \end{array}$
(C)	$\begin{array}{r} 44 \\ 5 \\ \hline \end{array}$	$\begin{array}{r} 44 \\ 3 \\ \hline \end{array}$	$\begin{array}{r} 24 \\ 0 \\ \hline \end{array}$	$\begin{array}{r} 34 \\ 2 \\ \hline \end{array}$	$\begin{array}{r} 44 \\ 4 \\ \hline \end{array}$	$\begin{array}{r} 34 \\ 1 \\ \hline \end{array}$
(D)	$\begin{array}{r} 4 \\ 4 \\ \hline \end{array}$	$\begin{array}{r} 44 \\ 1 \\ \hline \end{array}$	$\begin{array}{r} 34 \\ 0 \\ \hline \end{array}$	$\begin{array}{r} 44 \\ 2 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ 5 \\ \hline \end{array}$	$\begin{array}{r} 34 \\ 5 \\ \hline \end{array}$
(E)	$\begin{array}{r} 4 \\ 2 \\ \hline \end{array}$	$\begin{array}{r} 14 \\ 4 \\ \hline \end{array}$	$\begin{array}{r} 44 \\ 0 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ 3 \\ \hline \end{array}$	$\begin{array}{r} 14 \\ 5 \\ \hline \end{array}$	$\begin{array}{r} 24 \\ 1 \\ \hline \end{array}$

Subtraction Practice

Subtract, and write the differences on a folded paper.

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
(A)	6	11	12	9	14	16	2	13	9	1
	<u>6</u>	<u>9</u>	<u>7</u>	<u>0</u>	<u>6</u>	<u>8</u>	<u>2</u>	<u>7</u>	<u>5</u>	<u>1</u>
(B)	10	4	9	15	4	14	0	6	18	12
	<u>5</u>	<u>0</u>	<u>1</u>	<u>7</u>	<u>4</u>	<u>9</u>	<u>0</u>	<u>5</u>	<u>9</u>	<u>4</u>
(C)	16	12	6	11	10	16	5	13	7	11
	<u>9</u>	<u>5</u>	<u>0</u>	<u>6</u>	<u>8</u>	<u>7</u>	<u>3</u>	<u>4</u>	<u>6</u>	<u>8</u>
(D)	10	3	17	4	7	14	5	15	7	17
	<u>9</u>	<u>3</u>	<u>9</u>	<u>2</u>	<u>0</u>	<u>5</u>	<u>2</u>	<u>8</u>	<u>3</u>	<u>8</u>
(E)	13	8	7	11	12	3	4	14	8	2
	<u>5</u>	<u>8</u>	<u>1</u>	<u>4</u>	<u>8</u>	<u>2</u>	<u>1</u>	<u>8</u>	<u>7</u>	<u>0</u>

Adding Two-Figure Numbers

Dan is in the third grade, and after school and on Saturdays he sells *Saturday Evening Posts*. Last Thursday he sold 21 *Posts* before supper and 38 *Posts* after supper. Do you know how to find out how many *Posts* he sold in all on Thursday? Dan does. Here is the way Dan did it.



Dan: I sold 21 *Saturday Evening Posts* before supper and 38 after supper. I want to know how many I sold all together. To find this out, I shall write 21 and 38 in a column. Now all I have to do is to add the 1 and 8, just as I have already learned, and write 9 in the answer; then add 2 and 3 and write 5 in the answer. This is all I think in working this problem, "1 and 8 are 9, and 2 and 3 are 5."

That is not very hard, is it? Do you think you can work some problems like Dan's? Try those in the next lesson.

Problems

1. George's father had 15 sheep and bought 12 more sheep. How many sheep had George's father then?

15 Write 15 and 12 in a column.

12 Think, "5 and 2 are 7." Write 7.

27 Think, "1 and 1 are 2." Write 2.

Then, George's father had 27 sheep.

Now work the problems on pages 77 and 78 by yourself.

2. Mary read 42 pages in a story book on Monday, and on Tuesday she read 35 more pages. How many pages did she read all together?

3. Grace's father had 18 dairy cows. He bought 21 more dairy cows. How many dairy cows had Grace's father then?

4. John helped his father plant 14 rows of potatoes one week, and the next week they planted 12 more rows. How many rows of potatoes did they plant all together?

5. Harry found 14 eggs in one barn and 21 eggs in another barn. He carried them all into the house in a basket. How many eggs were in the basket?

6. There are 42 children in the third grade and 34 children in the fourth grade. They all meet to sing. How many children are there in the whole group when they are together?

7. Henry's father had 41 dollars in the bank, and he put in 38 dollars more. How much did he then have in the bank?

8. Mary and Kate went to the moving picture show. Their tickets cost 20 cents; their car fare down town and back was 24 cents; and they spent 15 cents for candy. How much did Mary and Kate spend on their trip to the show?

Write the numbers in a column.

20 Think, "0 and 4 are __?__, and 5 are __?__."

24 Write __?__.

15 Think, "2 and 2 are __?__, and 1 are __?__."

Write __?__.

9. George lived in the country. He went to the city with his mother one day in April to do some shopping. George bought some marbles for 12 cents, a ball

78 Adding One- and Two-Figure Numbers

for 25 cents, and a top for 10 cents. How much did George spend for the marbles, ball, and top together?

10. Grace is George's sister. She also went to the city with George and her mother. She bought the following things: a box of crayons for 10 cents, a piece of ribbon for 43 cents, and a doll's hat for 15 cents. How much did Grace spend all together for the crayons, ribbon, and hat?

11. One Saturday Charles and Arthur went fishing with their fathers. Charles caught 10 fish, Arthur caught 12 fish, Charles's father caught 24 fish, and Arthur's father caught only 3 fish. They put all the fish on a string and got a man to take their pictures with the long string of fish. How many fish were on the string?

10 Write the numbers in a column. Notice
12 where the 3 is written.

24 Think, "0 and 2 are $\underline{\quad}?\underline{\quad}$, and 4 are $\underline{\quad}?\underline{\quad}$,
3 and 3 are $\underline{\quad}?\underline{\quad}$." Write $\underline{\quad}?\underline{\quad}$.

— Think, "1 and 1 are $\underline{\quad}?\underline{\quad}$, and 2 are $\underline{\quad}?\underline{\quad}$."
Write $\underline{\quad}?\underline{\quad}$.

12. The first five games of the season, the football team of the Washington School made scores as follows: first game, 10 points; second game, 21 points; third game, 6 points; fourth game, 30 points; and fifth game, 2 points. How many points did the Washington School football team score in these five games?

10 Write the numbers in a column. Notice
21 where the 6 and 2 are written.

6 Think, "0 and 1 are $\underline{\quad}?\underline{\quad}$, and 6 are $\underline{\quad}?\underline{\quad}$, and
30 0 are $\underline{\quad}?\underline{\quad}$, and 2 are $\underline{\quad}?\underline{\quad}$." Write $\underline{\quad}?\underline{\quad}$.

2 Think, "1 and 2 are $\underline{\quad}?\underline{\quad}$, and 3 are $\underline{\quad}?\underline{\quad}$."
— Write $\underline{\quad}?\underline{\quad}$.

Addition Practice

Now see if you can add more columns like those you added in working the problems in the last lesson. Put a sheet of paper under row A on page 80 and write the sums on it. Then fold the top of the paper down and write the sums for row B. Then fold it down again and write the sums for row C. Do the same for row D.

Here are a few examples worked to show you again how to find the sums.

61	Think, "1 and 7 are 8."	Write 8.
37	Think, "6 and 3 are 9."	Write 9.
<u>98</u>		

28		
30	Think, "8 and 0 are 8, and 1 are 9."	Write 9.
11	Think, "2 and 3 are 5, and 1 are 6."	Write 6.
<u>69</u>		

42	Think, "2 and 1 are 3, and 0 are 3, and 3 are 6."
21	Write 6.
20	Think, "4 and 2 are 6, and 2 are 8, and 1 are 9."
13	Write 9.
<u>96</u>	

21	
10	Think, "1 and 0 are 1, and 2 are 3, and 0 are
12	3, and 1 are 4." Write 4.
30	Think, "2 and 1 are 3, and 1 are 4, and 3 are
11	7, and 1 are 8." Write 8.
<u>84</u>	

Do these in the same way:

	1.	2.	3.	4.	5.	6.	7.	8.	9.
(A)	61 37 <hr/>	18 71 <hr/>	80 10 <hr/>	40 30 <hr/>	19 10 <hr/>	40 22 <hr/>	41 23 <hr/>	55 10 <hr/>	53 20 <hr/>
(B)	28 30 11 <hr/>	10 47 32 <hr/>	61 15 23 <hr/>	12 16 20 <hr/>	23 14 31 <hr/>	44 11 32 <hr/>	35 23 20 <hr/>	46 20 31 <hr/>	17 22 30 <hr/>
(C)	42 21 20 13 <hr/>	34 20 12 23 <hr/>	45 11 20 23 <hr/>	28 30 10 21 <hr/>	12 23 34 20 <hr/>	11 10 21 56 <hr/>	32 11 14 40 <hr/>	45 10 11 21 <hr/>	10 20 40 17 <hr/>
(D)	21 10 12 30 11 <hr/>	30 11 21 12 14 <hr/>	11 20 30 16 10 <hr/>	21 20 11 13 12 <hr/>	10 12 20 11 23 <hr/>	13 21 21 12 11 <hr/>	20 14 30 20 15 <hr/>	31 20 11 21 14 <hr/>	10 21 11 10 36 <hr/>

More Addition Practice

Copy these numbers in columns and add. The first set of numbers is arranged right for you. Notice where the 4 is. Do the other examples in the same way.

- | | | |
|-----------|----|-------------------|
| 12 | 1. | 12, 4, 11, and 20 |
| 4 | 2. | 30, 12, 21, and 6 |
| 11 | 3. | 42, 10, 5, and 1 |
| <u>20</u> | 4. | 36, 20, and 3 |

5. 10, 2, 14, 3, and 30
6. 21, 3, 1, 2, and 40
7. 32, 21, 14, and 2
8. 4, 2, 21, and 12
9. 13, 23, 33, and 10
10. 42, 5, 50, and 1

General Practice 2

Write the answers on a sheet of paper. Time allowed: 4 minutes.

1.	2.	3.	4.
$8 - 3 =$	9 and 0 are	10 less 7 =	$3 + 8 =$
5.	6.	7.	8.
6 from 8 =	Subtract:	$1 + 9 =$	6 minus 1 =
	3		
	1		
	—		
9.	10.	11.	12.
Add:	4 from 8 =	1 plus 8 =	0 and 1 are
7			
0			
—			

United States Money — The Cent, the Nickel, the Dime, and the Quarter

In this lesson there are the pictures of four common pieces of money. They are called **coins**. Have you any coins like these? Which one of the four coins would you rather have?

This coin, as you probably know, is called one **cent**. Although it is not the smallest coin we have in size, it has the smallest value. It is the smallest amount of



money you can use in paying for anything. It is made of copper. Sometimes it is called one **penny**.

The sign ¢ means "cent" or "cents."

Do you know the name of the next coin? It is called a **nickel**. Do you know how many cents make a



nickel? It takes 5 cents to make a nickel. A nickel will buy as much as 5 cents will buy. A nickel is also called a **5-cent piece**.

1 nickel = 5 cents

Can you think where a nickel gets its name? If you know what a nickel is made of, you can.

This coin is called a **dime**. It is worth 10 cents. That is, it will buy as much as 10 cents will buy. It



is made of silver. It is sometimes called a **10-cent piece**.

1 dime = 10 cents
1 dime = 2 nickels

This coin is called a **quarter**. It is worth twenty-five cents. It is also the same in value as 2 dimes and

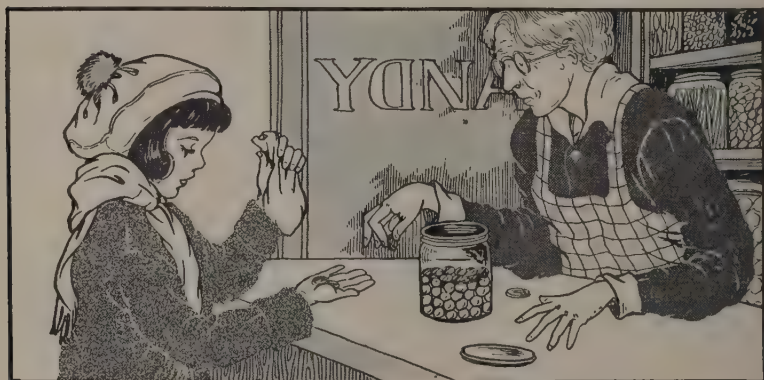


1 nickel, or the same as 5 nickels. It, also, is made of silver. It is sometimes called a **25-cent piece**.

1 quarter = 25 cents
1 quarter = 2 dimes and 1 nickel
1 quarter = 5 nickels

Making Change

Often, in buying goods, the amount of money given to the storekeeper to pay for the goods is more than the cost of the goods bought. In such a case, the storekeeper gives back the difference in **change**. For example, you buy candy that costs 2¢. You give the storekeeper a nickel to pay for it. Now a nickel is 5¢



more than 2¢; so the storekeeper will give back 3¢ in change. That is, you get the candy and 3¢ for your nickel.

To find the amount of change, add enough to the cost to make the amount paid. If you buy some candy for 2¢ and give a nickel in payment, think: "2¢ and how many cents are 5¢? Since 2¢ and 3¢ are 5¢, 3¢ is the amount of change."

Facts You Should Know to Make Change

On page 85 are some facts you need to know to make change. Think the right answers where the question marks are.

1.	2.
(A) 1 and 4 are ___?___	1 and ___?___ are 5
(B) 3 and 2 are ___?___	3 and ___?___ are 5
(C) 4 and 1 are ___?___	4 and ___?___ are 5
(D) 2 and 3 are ___?___	2 and ___?___ are 5
(E) 5 and 5 are ___?___	5 and ___?___ are 10
(F) 7 and 3 are ___?___	7 and ___?___ are 10
(G) 9 and 1 are ___?___	9 and ___?___ are 10
(H) 6 and 4 are ___?___	6 and ___?___ are 10
(I) 8 and 2 are ___?___	8 and ___?___ are 10
(J) 11 and 4 are ___?___	11 and ___?___ are 15
(K) 13 and 2 are ___?___	13 and ___?___ are 15
(L) 12 and 3 are ___?___	12 and ___?___ are 15
(M) 14 and 1 are ___?___	14 and ___?___ are 15
(N) 15 and 5 are ___?___	15 and ___?___ are 20
(O) 18 and 2 are ___?___	18 and ___?___ are 20
(P) 16 and 4 are ___?___	16 and ___?___ are 20
(Q) 19 and 1 are ___?___	19 and ___?___ are 20
(R) 17 and 3 are ___?___	17 and ___?___ are 20
(S) 15 and 10 are ___?___	15 and ___?___ are 25
(T) 20 and 5 are ___?___	20 and ___?___ are 25
(U) 22 and 3 are ___?___	22 and ___?___ are 25
(V) 24 and 1 are ___?___	24 and ___?___ are 25
(W) 21 and 4 are ___?___	21 and ___?___ are 25
(X) 23 and 2 are ___?___	23 and ___?___ are 25

Playing Store

You have already learned how to make change. Now you can sell things to one another and make change for all your sales. Use play money and find how much change is due after each purchase. On page 86 is a picture of things to sell, at the prices given.



1. You sell to Charles a bag of salt and a quart of milk, and he pays for them with a quarter.

2. Mary buys a quart of milk and pays for it with a dime and a nickel.

3. Dick's mother wants him to bring home 1 bar of soap and 1 pound of sugar. Dick pays for his purchases with a dime and a nickel.

4. James buys 1 apple and 1 basket and pays for them with two dimes.

5. Tom buys 1 loaf of bread, 1 quart of milk, and 1 orange. He pays a quarter for them.

6. You sell Frank 1 can of corn, and he pays for it with two dimes.

7. Harry takes 1 loaf of bread, 1 bar of soap, and 1 apple. He pays for them with two dimes.

8. Grace buys 1 orange, paying a nickel.

9. Jack gives a quarter for 1 bag of salt and 1 loaf of bread.

10. George buys 1 pound of sugar and 1 apple, paying for them with a dime.

11. You sell John 1 quart of milk and 1 pound of sugar. He gives you two dimes for them.

12. Kate buys 1 apple and 1 orange. She gives you a dime to pay for them.

Practice in Making Change

Use play money and count out the change for the following purchases if:

1. The cost is 3¢ and the money paid is a nickel.
Think, "3¢ and how many cents are 5¢?"

2. The cost is 1¢ and the money paid is a nickel.

3. The cost is 2¢ and the money paid is a nickel.

4. The cost is 4¢ and the money paid is a nickel.

5. The cost is 9¢ and the money paid is a dime.

6. The cost is 7¢ and the money paid is a dime.

7. The cost is 5¢ and the money paid is a dime.

8. The cost is 8¢ and the money paid is a dime.

9. The cost is 6¢ and the money paid is a dime.

10. The cost is 14¢ and the money paid is a dime and a nickel.

11. The cost is 12¢ and the money paid is a dime and a nickel.

12. The cost is 11¢ and the money paid is a dime and a nickel.

13. The cost is 13¢ and the money paid is a dime and a nickel.

14. The cost is 19¢ and the amount paid is two dimes.

15. The cost is 15¢ and the amount paid is two dimes.

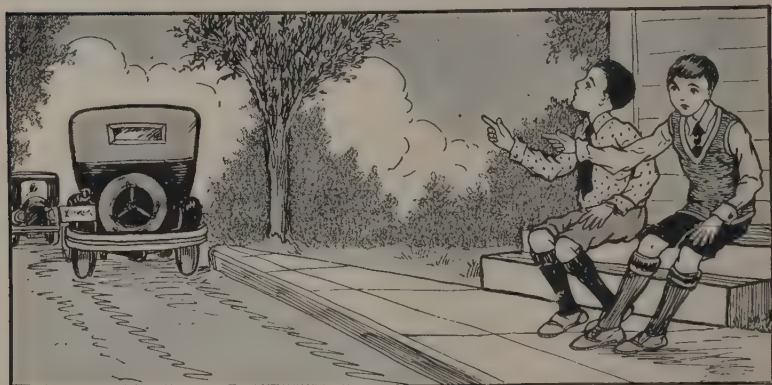
16. The cost is 17¢ and the amount paid is two dimes.

17. The cost is 18¢ and the amount paid is two dimes.

18. The cost is 16¢ and the amount paid is two dimes.

19. The cost is 22¢ and the money paid is a quarter.
20. The cost is 20¢ and the money paid is a quarter.
21. The cost is 24¢ and the money paid is a quarter.
22. The cost is 15¢ and the money paid is a quarter.
23. The cost is 23¢ and the money paid is a quarter.
24. The cost is 21¢ and the money paid is a quarter.

Adding Three-Figure Numbers



1. Harry and his brother Charles were out on their front steps one Sunday afternoon, counting the automobiles as they passed by. Harry counted the cars that went in one direction, and Charles counted the cars that went in the other direction. Harry counted 215 cars, and Charles counted 183 cars. How many cars passed their home while they counted?

215 Write the numbers in a column.

183 Think, "5 and 3 are 8." Write 8 under the 3.

398 Think, "1 and 8 are 9." Write 9 under the 8.

Think, "2 and 1 are 3." Write 3 under the 1.

Then, 398 cars passed by while they counted.

2. There are two schools in Fairview, the Longfellow School and the Emerson School. There are 341 pupils in the Longfellow School and 428 pupils in the Emerson School. How many pupils go to school in Fairview?

3. In making an automobile trip from Henry's home to Chicago, Henry's father drove 237 miles the first day and 242 miles the second day. How far from home was Henry's father at the end of the second day?

4. Betty Jane has room for 320 more stamps in her stamp book. Mary Louise has room for 400 more stamps in hers. One day their Uncle Frank said to them, "I will give you enough stamps to fill both books if you will tell me the total number I must furnish." Betty Jane and Mary Louise quickly told him the total. (Total means the same as "sum.") What was the correct total?

Addition Practice

Add, and write the sums on a paper. Prove.

In number 1 A, think, "3 and 4 are 7." Write 7. Think, "7 and 2 are 9." Write 9. Think, "9 and nothing are 9." Write 9. The answer is 997.

Watch numbers 5 A, 2 B, and 3 C.

	1.	2.	3.	4.	5.
(A)	973 <u>24</u>	308 <u>471</u>	293 <u>504</u>	629 <u>300</u>	702 <u>83</u>
(B)	741 <u>238</u>	404 <u>93</u>	216 <u>742</u>	328 <u>460</u>	700 <u>156</u>
(C)	295 <u>402</u>	324 <u>502</u>	325 <u>41</u>	628 <u>310</u>	752 <u>105</u>

Review of How to Work Problems

You have noticed that in some problems you add and in other problems you subtract. From now on you will have to decide for yourself whether to add or to subtract in each problem you work.

In working problems:

1. See what the problem tells you.
2. See what it asks you to find.
3. Decide whether you should add or subtract to find the answer.
4. Add or subtract as you decide.

Problems

1. George set out 9 plants in his school garden, but 1 of them died. How many plants lived?

2. Five frogs were swimming in the pool, and 4 frogs were on the bank beside the pool. How many frogs were there all together?

3. Mary wrote 8 words. Then she erased 3 of them. How many words did Mary have left?

4. Henry is 7 years old, and his sister is 2 years younger. How old is Henry's sister?

5. Frank has 3 gray rabbits and 2 white rabbits. How many rabbits has he?

6. Kate has 1 orange, and Grace has 1 orange. How many oranges have they together?

7. Tom had 9 tickets to sell for a show. After working hard all day to sell them, he sold 9 tickets. How many tickets did he have left to sell?

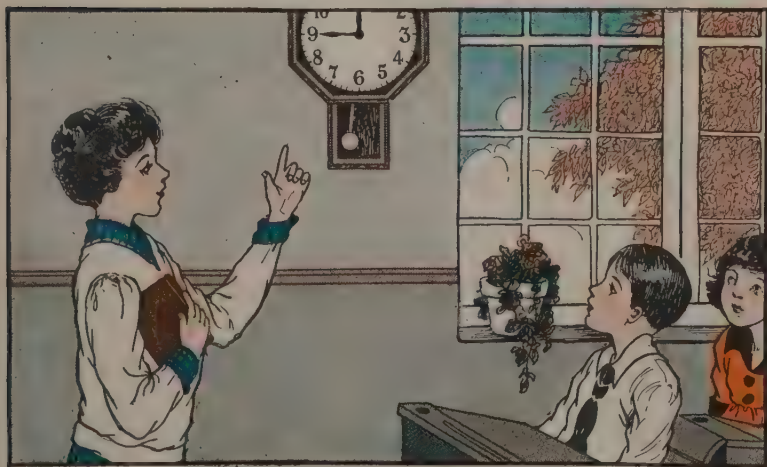
8. Mary invited 7 children to a party, and her brother invited 2 children. How many children were invited to the party?

General Practice 3

Write the answers on a sheet of paper. Time allowed: 4 minutes.

1.	2.	3.	4.
$5 + 9 =$	$11 \text{ less } 7 =$	$10 - 3 =$	$2 \text{ plus } 1 =$
5.	6.	7.	8.
2 and 0 are	5 from 5 =	$9 + 1 =$	9 from 13 =
9.	10.	11.	12.
Subtract:	Add:	7 minus 5 =	Add:
9	6		8
<u>8</u>	<u>3</u>		<u>1</u>

Telling Time in Hours



Teacher: George, what time does school begin?

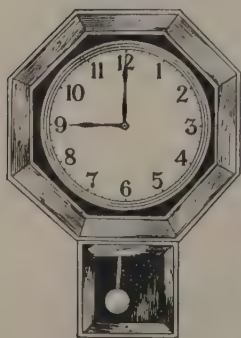
George: School begins at nine o'clock.

Teacher: That is right. We all come to school at nine o'clock. Grace, do you know what time it is on this clock?

Grace: Yes, Miss Wilson; it is exactly nine o'clock.

Teacher: How can you tell that it is nine o'clock, Grace?

Grace: I can tell by the little hand on the clock. When the little hand points to 9, it is 9 o'clock. If it pointed to 10, it would be 10 o'clock.



Teacher: That is right, Grace. You can always tell what hour it is by looking to see which number the little hand points to. Our morning session closes at twelve o'clock. Ralph, where will the little hand be at twelve o'clock?

Ralph: It will be pointing to 12.

Teacher: Yes, you are right. We come back to school at one o'clock. Where will the little hand be then, James?

James: At one o'clock the little hand will be pointing to 1.

Teacher: You are right. Our school will close this afternoon at four o'clock. Where will the little hand be then, Kate?

Kate: At four o'clock the little hand will be pointing to 4.

Teacher: That is right. You have now learned how to tell what hour it is. The little hand on a clock is called the **hour hand** because it shows the number of the hour. The other hand is called the **minute**

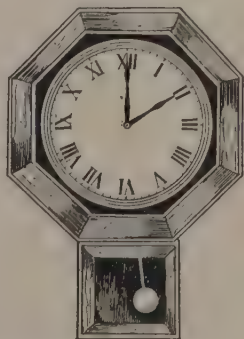
hand. Have you noticed that the minute hand is always on 12 for each hour? It is. Remember this. Tom, how many hours are shown on the face of the clock?

Tom: There are always 12 hours on the face of the clock.

Teacher: Yes. There are 12 hours on the face of the clock, and there are 24 hours in a whole day. In a day, then, the little hand goes all the way around the clock twice. We close school at 12 o'clock. That 12 o'clock, in the middle of the day, is called **noon**. Sometimes people stay up late at night and do not go to bed until 12 o'clock at night. That 12 o'clock, in the middle of the night, is called **midnight**. It is 12 hours from midnight to noon, or 12 hours from noon to midnight. Time before noon is marked A.M., and time after noon is marked P.M. Noon is marked M.

Sometimes clocks have numbers like these: I, II, III, IIII, V, VI, VII, VIII, IX, X, XI, and XII.

These are called **Roman numerals**. The values of the Roman numerals are as follows:



The values of the

I	II	III	IIII	V	VI	VII	VIII	IX	X	XI	XII
1	2	3	4	5	6	7	8	9	10	11	12

Except on a clock, the Roman number IIII is usually written: IV.

What time is it by the clock shown on this page?

Problems

1. In the morning some schools open at 9 o'clock and close at 12 o'clock. How many hours are these schools open in the morning?

2. In the afternoon some schools open at 1 o'clock and close at 4 o'clock. How many hours are these schools open in the afternoon?

3. How many hours a day is a pupil in one of these schools in school?

4. How many hours are you in school in the morning? In the afternoon? All day?

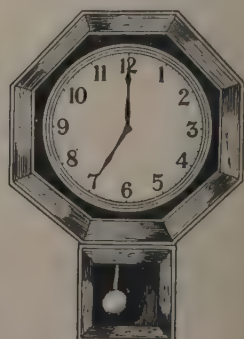
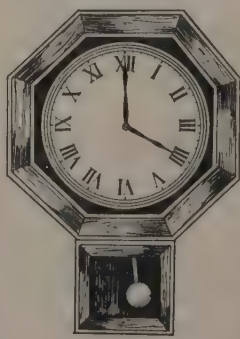
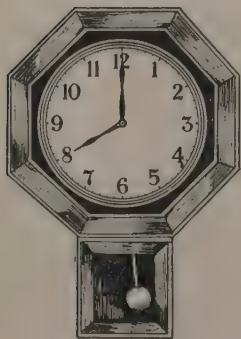
5. How many hours is it from 8 A.M. until 12 M.? From 2 P.M. until 11 P.M.?

6. How many hours is it from 8 A.M. until 5 P.M.?

7. How many hours is it from 9 P.M. until 4 A.M. the next day?

8. To what number does the hour hand point when it is three o'clock? Six o'clock? Two o'clock? Eleven o'clock?

9. What is the time shown by each of these clocks?



10. On a toy clock, set the hands to show that it is nine o'clock; five o'clock; ten o'clock; twelve o'clock.

11. In Roman numbers, what letter stands for the number 1? What letters stand for these numbers?

2 3 4 5 6 7 8 9 10 11 12

12. Use letters and write as Roman numbers:

5 2 4 1 6 3 10 7 12 9 11 8

13. Read these numbers:

VII IV II VIII V X I XI III VI IX XII

Review

Here is a review of what you have been studying. Write the numbers 1 to 22 on a sheet of paper. After each number you have written, write the answer to the question that has the same number.

At the end of each question you will see a page number. If you missed any part of the test, turn back to the page number given after that part of the test, where you will find how to answer what you missed. Study what you missed until you are sure you know what to do. Then go back to the review and again try the part you missed. Do this until you do not miss anything or until your teacher tells you to work on something else.

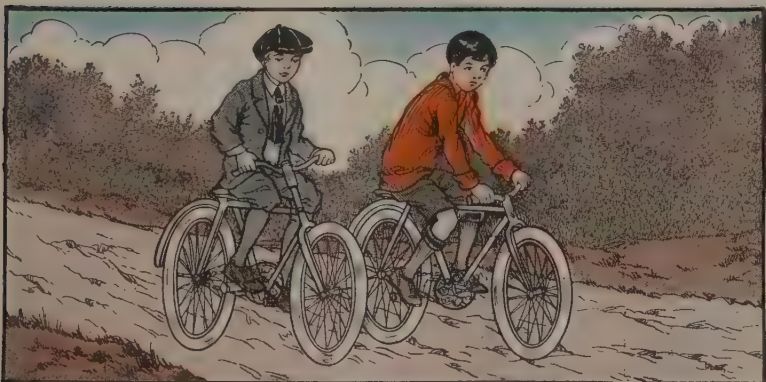
1. What is a sum? (Page 19)
2. What is a difference? (Page 41)
3. What do we mean by "finding a difference"? (Page 41)
4. What do we mean by "finding a sum"? (Page 19)
5. What do we do when we add? (Page 19)

6. What are the names of the days of the week?
(Page 61)
7. How many days are there in a week? (Page 61)
8. What kind of number is this: X? (Page 93)
9. What is the long hand on a clock called?
(Page 92)
10. What is the short hand on a clock called?
(Page 92)
11. What is 12 o'clock in the middle of the day called?
(Page 93)
12. What is 12 o'clock in the middle of the night
called? (Page 93)
13. What does A.M. mean? (Page 93)
14. What does P.M. mean? (Page 93)
15. What does "minus" mean? (Page 51)
16. How many times a day does the short hand go
around the face of the clock? (Page 93)
17. How many hours are there in a whole day?
(Page 93)
18. How many numbers are there on a clock face?
(Page 93)
19. What are Roman numerals? (Page 93)
20. How much is $9 - 0$? (Page 54)
21. How much is 9 and 0? (Page 25)
22. How much is 0 and 0? (Page 25)

CHAPTER V

SUBTRACTING TWO-FIGURE AND THREE-FIGURE NUMBERS

Subtracting Two-Figure Numbers



1. James and Ralph have bicycles. One week James rode a total of 87 miles and Ralph rode 56 miles. Which boy rode farther? How much farther?

Of course, you see that James rode farther than Ralph. Here is an easy way to find out how much farther he rode.

Write the numbers, putting the smaller number under the larger number. Think, "6 from 7 is 1."
87 Write 1 under the 6. Think, "5 from 8 are 3."
56 Write 3 under the 5.
31

Then, James rode 31 miles farther than Ralph.

2. Jean's uncle gave her 58 cents, and she spent 15 cents for apples. How many cents did Jean have left?

98 Subtracting Two-Figure Numbers

3. Mr. Brown has 43 cows. Twenty-one of them are black and white, and the rest are brown. How many brown cows has he?

4. There were 24 cookies on the plate for supper. The family ate 12 of them. How many cookies were left?

5. May's mother gave her 25 cents. She spent 15 cents for ribbon. How many cents did she have left?

6. Anne's father is 49 years old, and her brother Henry is 27 years younger than her father. How old is her brother Henry?

7. There were 27 roses on a bush. Betty picked 13 of them. How many roses were left on the bush?

8. Fred had 19 small chickens. The cat killed 3 of them. How many small chickens did Fred have left?

9. Joe is 18 years old, and his sister is 6 years old. How many years older than his sister is Joe?

10. Ruth took 35 tickets to sell for a school play. She has already sold 21 of them. How many has she still to sell?

11. There are 46 children in the third grade and 32 children in the fourth grade. How many more children are there in the third grade than in the fourth grade?

12. Paul has only 60 cents, and he wants to buy a baseball that costs 85 cents. His mother has promised to give him the rest of the money he needs to get the ball if he will weed the garden. How much money is he to get for weeding the garden?

13. Kate's teacher had 28 story books. She passed out 12 of them to the class. How many books did Kate's teacher have left?

Proving Subtraction

After you have worked an example in subtraction, you should prove your work to find out whether you have the right answer. You can prove an example in subtraction by adding the difference to the smaller number to

see if it gives the larger number. If you subtract 54 from 86, you get 32 as the difference. To prove that this is right, add 32 to 54. This gives 86, the larger number. You should prove every example in subtraction that you work.

If an example does not prove, work and prove it again.

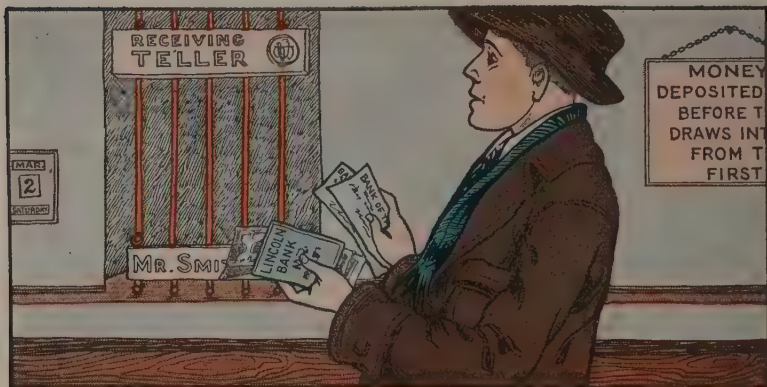
Subtraction Practice

Subtract, and write the differences on a folded paper. Prove. Here is one of the examples worked to show you again how to work this kind of example.

74 Think, "0 from 4 are 4." Write 4 under the 0.
30 Think, "3 from 7 are 4." Write 4 under the 3.
44 The difference is 44.

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
(A)	74	72	58	34	80	63	98	79	61	65
	<u>30</u>	<u>51</u>	<u>31</u>	<u>31</u>	<u>40</u>	<u>61</u>	<u>42</u>	<u>30</u>	<u>50</u>	<u>41</u>
(B)	86	69	87	83	57	93	49	47	92	93
	<u>50</u>	<u>41</u>	<u>62</u>	<u>70</u>	<u>51</u>	<u>62</u>	<u>32</u>	<u>42</u>	<u>30</u>	<u>72</u>
(C)	84	72	95	93	96	98	86	74	76	87
	<u>52</u>	<u>42</u>	<u>30</u>	<u>51</u>	<u>81</u>	<u>70</u>	<u>32</u>	<u>70</u>	<u>51</u>	<u>70</u>

Subtracting Three-Figure Numbers



1. Bob's father put 975 dollars in the bank. Later he needed 360 dollars to buy some cows; so he drew 360 dollars out of the bank. How much money had Bob's father left in the bank?

Here is an easy way to find out how many dollars Bob's father had left in the bank.

	Think, "0 from 5 are 5." Write 5 under the 0.
975	Think, "6 from 7 is 1." Write 1 under the 6.
360	Think, "3 from 9 are 6." Write 6 under the 3.
<u>615</u>	Then, Bob's father had 615 dollars left in the bank.

2. The Emerson School gave a school play. The third and fourth grades sold the tickets. The third grade sold 398 tickets, and the fourth grade sold 342 tickets. Which grade sold the greater number of tickets? How many more than the other?

3. Jack's uncle has a sheep ranch. His uncle had 435 sheep. One day he sold 200 sheep to a man who

wanted to start a ranch of his own. How many sheep did Jack's uncle have left?

4. It is 745 miles from the town where Will lives to Yellowstone Park. One day Will's father said, "Mother, let us all take a trip to Yellowstone Park in our new car. It is a beautiful drive, and I know you will enjoy it." "Oh, that will be fine. Let's start soon," said Will's mother. They drove 215 miles the first day. How much farther was it to the Park?

5. Mr. Johnson had 985 dollars in the bank. If he drew out 550 dollars to pay for some furniture, how much money had he left in the bank?

Subtraction Practice

Subtract 105 from 937.

937 5 from 7 = ?

105 0 from 3 = ?

— 1 from 9 = ?

In subtracting 105 from 937, think, "5 from 7 are 2." Write 2 under the 5.

937 Think, "0 from 3 are 3." Write 3 under the 0.

105 Think, "1 from 9 are 8." Write 8 under the 1.

832 Then, 105 from 937 are 832.

After you have studied the example above carefully, write the differences for the examples on page 102 on a folded paper. Prove. In number 3A, think, "3 from 7 are 4." Write 4. Think, "7 from 8 is 1." Write 1. Think, "Nothing from 5 are 5." Write 5. The difference is 514.

	1.	2.	3.	4.	5.	6.	7.
(A)	634 <u>420</u>	447 <u>420</u>	587 <u>73</u>	980 <u>520</u>	991 <u>921</u>	388 <u>74</u>	885 <u>531</u>
(B)	971 <u>520</u>	640 <u>520</u>	669 <u>610</u>	265 <u>42</u>	667 <u>631</u>	938 <u>630</u>	762 <u>521</u>
(C)	999 <u>830</u>	467 <u>64</u>	867 <u>620</u>	783 <u>702</u>	873 <u>831</u>	675 <u>43</u>	727 <u>621</u>
(D)	871 <u>621</u>	796 <u>521</u>	681 <u>521</u>	395 <u>74</u>	972 <u>721</u>	649 <u>531</u>	864 <u>831</u>

Problems

Remember that, in working problems, you should:

1. See what the problem tells you.
2. See what the problem asks you to find.
3. Decide whether to add or to subtract to find the answer.
4. Add or subtract as you decide.

1. Dan counted 5 bluebirds in the pasture, and then 3 of them flew away. How many were left?

2. Charles can spell 7 new words, and Henry can spell 3 new words less than Charles. How many new words can Henry spell?

3. It is 9 blocks from Billy's home to his father's office. If Billy walked from his home to his father's office and back, how many blocks did Billy walk?

4. Robert had 5 story books, but he gave 2 story books to the Salvation Army. How many story books had he left?

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5. In making a flower garden, Mary's mother set out 5 red rose bushes and 6 white rose bushes. How many rose bushes did Mary's mother set out?

6. James had 9 marbles, but he lost 4 marbles. How many marbles had he left?

7. Mr. Smith has 4 colored shirts and 3 white shirts. How many shirts has Mr. Smith?

8. Kate saw 3 birds in their nest and 6 birds in the apple tree. How many birds did Kate see?

9. Harry's aunt had 9 postage stamps. She used 2 of them on letters. How many stamps did Harry's aunt have left?

10. Frank put 8 cents under his hand. Then he took out 2 cents. How many cents were left under Frank's hand?

Reading and Writing Some New Numbers

1. You have already learned the numbers from 0 to 999. The next number after nine hundred ninety-nine is one thousand. It is printed in figures like this: 1000; and it is written like this: *1000* .

2. One thousand is 10 hundreds.



One thousand 1000

3. One thousand one is written: *1001* .

4. One thousand ten is written: *1010* .

5. One thousand, one hundred is written: *1100* .

6. One thousand, one hundred ten is written: *1110* .

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7. One thousand, one hundred eleven is written: *1111* .

8. Two thousand is written: *2000* .

$$\begin{array}{r} 1000 \\ 1000 \\ \hline 2000 = 2000 \end{array}$$

9. Three thousand, four hundred is written: *3400* .

$$\begin{array}{r} 100 \\ 1000 \quad 100 \\ 1000 \quad 100 \\ 1000 \quad 100 \\ \hline 3400 = 3000 + 400 \end{array}$$

10. Four thousand, five hundred sixty-eight is written: *4568* .

$$\begin{array}{r} 1 \\ 1 \\ 10 \quad 1 \\ 100 \quad 10 \quad 1 \\ 1000 \quad 100 \quad 10 \quad 1 \\ 1000 \quad 100 \quad 10 \quad 1 \\ 1000 \quad 100 \quad 10 \quad 1 \\ 1000 \quad 100 \quad 10 \quad 1 \\ \hline 4568 = 4000 + 500 + 60 + 8 \end{array}$$

11. Nine thousand, eight hundred seventy-five is written: *9875* .

12. Write in figures: one thousand, seven hundred; five thousand, nine hundred; eight thousand, six hundred forty; nine thousand, five hundred thirty-seven; two thousand one.

13. Read these numbers:

47	39	16	82	19	51	98
201	653	795	114	832	976	400
2100	5176	4092	1009	2040	7593	6437

14. What is the largest number in the first row? In the second row? In the third row? In all three rows? What is the smallest number in all three rows?

15. The number of Mary's house is 7422. Write it in words.

16. The number of Father's post office box is 708. Write it in words.

17. The number on Mr. Brown's automobile is 9203. Write it in words.

18. Mr. Brown's automobile shows that he has gone 8752 miles. Write the number in words.

Review

Here is a review of what you have been studying. Write the numbers 1 to 10 on a sheet of paper. After each number you have written, write the answer to the question that has the same number.

At the end of each question you will see a page number. If you missed any part of the test, turn back to the page number given after that part of the test, where you will find how to answer what you missed. Study what you missed until you are sure you know what to do. Then go back to the review and again try the part you missed. Do this until you do not miss anything or until your teacher tells you to work on something else.

1. Write nine thousand, four hundred fifty-six, using figures. (Page 104)

2. Which is larger, 8574 or 857? (Page 104)
3. What does "proving subtraction" mean?
(Page 99)
4. What does "proving addition" mean? (Page 69)
5. Find the difference between 458 and 326.
(Page 100)
6. Find the sum of 42, 21, and 35. (Page 77)
7. Write the number that comes just before 9000.
(Page 104)
8. Write the number that comes just after 5000.
(Page 104)
9. Write the number that comes just before 747.
(Page 10)
10. Write the number that comes just after 599.
(Page 10)

CHAPTER VI

CARRYING IN ADDITION

Getting Ready to Carry in Addition

$10 \text{ cents} = 1 \text{ dime}$

14 cents is 1 dime and 4 cents; or 14 cents is 4 cents and 1 dime.

Think the right numbers for these:

1. 17 cents is 7 cents and 1 dime.
2. 15 cents is 5 cents and ___?___ dime.
3. 12 cents is ___?___ cents and ___?___ dime.
4. 18 cents is ___?___ cents and ___?___ dime.
5. 13 cents is ___?___ cents and ___?___ dime.
6. 16 cents is ___?___ cents and ___?___ dime.
7. 11 cents is ___?___ cent and ___?___ dime.
8. 14 cents is ___?___ cents and ___?___ dime.
9. 19 cents is ___?___ cents and ___?___ dime.
10. 17 is 7 ones and 1 ten.
11. 15 is 5 ones and ___?___ ten.
12. 12 is ___?___ ones and ___?___ ten.
13. 18 is ___?___ ones and ___?___ ten.
14. 13 is ___?___ ones and ___?___ ten.
15. 16 is ___?___ ones and ___?___ ten.
16. 11 is ___?___ one and ___?___ ten.
17. 14 is ___?___ ones and ___?___ ten.

18. 19 is ___?___ ones and ___?___ ten.
19. 24 cents is 4 cents and 2 dimes.
20. 29 cents is 9 cents and ___?___ dimes.
21. 35 cents is ___?___ cents and ___?___ dimes.
22. 47 cents is ___?___ cents and ___?___ dimes.
23. 24 is 4 ones and 2 tens.
24. 29 is ___?___ ones and ___?___ tens.
25. 35 is ___?___ ones and ___?___ tens.
26. 47 is ___?___ ones and ___?___ tens.

Carrying 1

Add 25 cents and 37 cents.

Write one number under the other so that the cents will be under cents and the dimes under dimes.

Think, "5 cents and 7 cents are 12 cents, or 2 cents and 1 dime." Write 2 in the cents' column and add 1 dime to the dimes' column. We say, "Carry 1 dime."

Then think, "1 dime and 2 dimes are 3 dimes, and 3 dimes are 6 dimes." Write 6 in the dimes' column.

Then, 25 cents and 37 cents are 62 cents.

Finding Right Sums

Add 57 and 35.

Write one number under the other, with the ones under the ones and the tens under the tens.

Adding downward, think, "7 and 5 are 12, or 2 ones and 1 ten." Write 2 in the ones' column and carry 1 ten to the tens' column.

Then think, "1 and 5 are 6, and 3 are 9." Write 9 in the tens' column.

Then, 57 and 35 are 92.

Are the following added right?

46	59	74	29	47
<u>37</u>	<u>26</u>	<u>17</u>	<u>38</u>	<u>19</u>
83	85	91	67	66

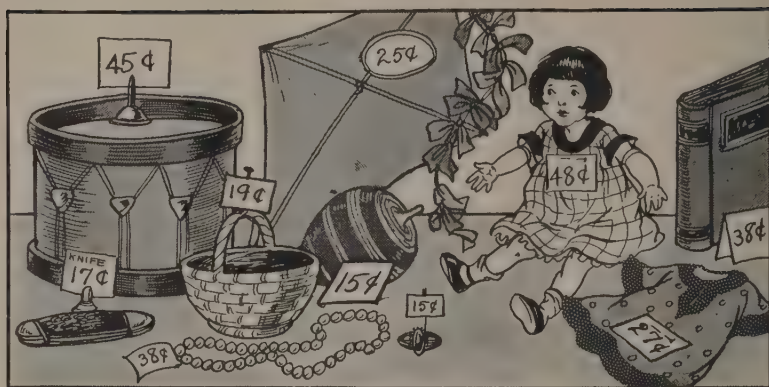
Addition Practice

Do not copy. Place a folded paper under these examples, add, and write the sums on the paper.

	1.	2.	3.	4.	5.	6.	7.	8.	9.
(A)	57	35	45	53	16	76	19	39	27
	<u>26</u>	<u>56</u>	<u>17</u>	<u>38</u>	<u>19</u>	<u>15</u>	<u>45</u>	<u>56</u>	<u>14</u>
(B)	23	66	17	37	36	28	15	46	66
	<u>57</u>	<u>24</u>	<u>28</u>	<u>23</u>	<u>37</u>	<u>59</u>	<u>35</u>	<u>48</u>	<u>15</u>
(C)	44	18	38	38	37	18	57	65	58
	<u>29</u>	<u>13</u>	<u>44</u>	<u>43</u>	<u>23</u>	<u>65</u>	<u>37</u>	<u>67</u>	<u>26</u>
(D)	47	19	32	48	76	11	59	37	25
	<u>49</u>	<u>51</u>	<u>38</u>	<u>18</u>	<u>15</u>	<u>79</u>	<u>37</u>	<u>46</u>	<u>38</u>
(E)	58	27	13	38	14	48	14	23	68
	<u>17</u>	<u>65</u>	<u>37</u>	<u>47</u>	<u>77</u>	<u>42</u>	<u>78</u>	<u>58</u>	<u>14</u>

Playing Store

Grace, Mary, Alice, Anne, Betty, Tom, Jack, Dan, Frank, and Edward were playing store. Turn the page and find what each paid for the things bought.



1. Tom bought a drum and a kite.
2. Mary bought a doll and a string of beads.
3. Betty bought a basket and a doll dress.
4. Jack bought a knife and a top.
5. Edward bought a book and a kite.
6. Grace bought a ring and a string of beads.
7. Anne bought a doll and a doll dress.
8. Frank bought a knife and a kite.
9. Alice bought a basket and a ring.
10. Dan bought a book and a top.

Carrying 2

Add 17 cents, 45 cents, and 29 cents.

Write the numbers in a column.

DIMES
CENTS

17

45

29

91

Think, "7 cents and 5 cents are 12 cents, and 9 cents are 21 cents, or 1 cent and 2 dimes." Write 1 in the cents' column and add 2 dimes to the dimes' column. We say, "Carry 2 dimes."

Think, "2 dimes and 1 dime are 3 dimes, and 4 dimes are 7 dimes, and 2 dimes are 9 dimes." Write 9 in the dimes' column.

Then, 17 cents plus 45 cents plus 29 cents are 91 cents.

Add 37, 18, and 26.

Write the numbers in a column.

37 Adding downward, think, "7 and 8 are 15, and
18 6 are 21." Write 1 and carry 2.

26 Think, "2 and 3 are 5, and 1 are 6, and 2 are 8."

81 Write 8.

Then, 37 plus 18 plus 26 are 81.

Are these added right?

27	15	34	57	36
18	29	19	9	29
35	27	28	18	8
<u>80</u>	<u>71</u>	<u>81</u>	<u>84</u>	<u>73</u>

Problems

1. Mr. Jones raised 18 bushels of potatoes on one piece of land, 24 bushels on another, and 39 bushels on another. How many bushels of potatoes did he raise in all?

2. Mary read 27 pages in a story book on Monday, 35 pages on Tuesday, and 28 pages on Wednesday. How many pages did she read all together?

3. Will helped his father plant some potatoes. One day they planted 14 rows; the next day they planted 17 rows; and the next day they planted 19 rows. How many rows of potatoes did they plant all together?

4. George saved 38 cents. His aunt gave him 15 cents, and his uncle gave him 27 cents. George put all this money into his bank. How many cents did he put into the bank?

5. Harry found 19 eggs in one nest, 22 eggs in another, and 9 eggs in another. How many eggs did Harry find in all?

6. Robert has 37 cents in his bank. If he puts in 15 more cents and his mother puts in 29 cents, how much money will he then have in his bank?

Addition Practice

Put a folded paper under these examples, add, and write the sums on the paper. In the first example think, "8 and 9 are 17, and 6 are 23." Write 3; carry 2. Think, "2 and 2 are 4, and 3 are 7, and 1 are 8." Write 8. The sum is 83. Do the others in the same way.

	1.	2.	3.	4.	5.	6.	7.	8.	9.
(A)	28	17	49	15	29	44	35	46	17
	39	37	15	16	14	18	29	27	25
	<u>16</u>	<u>38</u>	<u>27</u>	<u>29</u>	<u>38</u>	<u>28</u>	<u>29</u>	<u>19</u>	<u>38</u>
(B)	37	15	27	66	48	32	25	18	39
	19	18	17	9	17	19	39	17	15
	<u>28</u>	<u>49</u>	<u>39</u>	<u>16</u>	<u>15</u>	<u>29</u>	<u>18</u>	<u>26</u>	<u>18</u>

Carrying 3

Are these added right?

19	25	16	8	27
27	19	18	19	9
16	17	29	37	18
19	19	28	28	29
<u>81</u>	<u>80</u>	<u>91</u>	<u>92</u>	<u>83</u>

Carrying 4

Are these added right?

19	17	18	19	19
18	19	19	9	9
16	19	18	29	18
19	18	19	19	9
18	19	19	19	39
<u>90</u>	<u>92</u>	<u>93</u>	<u>95</u>	<u>94</u>

Problems

1. Paul bought a book for 28 cents, a tablet for 8 cents, a ruler for 9 cents, and a pencil for 5 cents. How much money did Paul spend in all?

2. Tom found 19 eggs in the barn, 28 eggs in a straw stack, 7 eggs in the henhouse, and 8 eggs in a corner by the fence. How many eggs did Tom find in all?

3. One rainy afternoon Kate, who was cutting out paper dolls, said, "I'm going to cut out 17 dolls for Anne, who is little and cannot cut them out for herself, 28 dolls for the crippled girl across the street, 9 for Betty, 18 for Jean, and 9 for myself." How many paper dolls did Kate have to cut out in all?

4. Five little girls were walking through a city park. "Let's count all the birds we see this afternoon. I'll count the robins," said May. "I'll count the blackbirds," said Alice. "I'll count the blue jays," said Ruth. "I'll count the sparrows," said Violet. "And I'll count the wrens," said Jane. May counted 18 robins, Alice counted 19 blackbirds, Ruth counted 9 blue jays, Violet counted 38 sparrows,

114 Addition and Subtraction Practice

and Jane counted 6 wrens. How many birds were counted in all?

Addition Practice

Do not copy. Place a folded sheet of paper under these examples, add, and write the sums on the folded paper.

	1.	2.	3.	4.	5.	6.	7.	8.	9.
(A)	17	25	15	28	18	19	9	19	18
	25	19	18	9	29	19	18	18	29
	29	19	29	19	8	29	19	18	19
	<u>19</u>	<u>18</u>	<u>29</u>	<u>25</u>	<u>29</u>	<u>29</u>	<u>49</u>	<u>29</u>	<u>19</u>
(B)	18	7	18	29	19	18	24	9	19
	17	19	29	29	15	9	19	27	26
	19	9	19	19	9	26	9	9	19
	18	18	9	19	19	19	29	28	17
	<u>19</u>	<u>19</u>	<u>9</u>	<u>19</u>	<u>29</u>	<u>19</u>	<u>9</u>	<u>19</u>	<u>9</u>

Subtraction Practice

Subtract, and write the differences on a folded paper.

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
(A)	10	8	7	12	10	8	3	9	8	9
	<u>2</u>	<u>6</u>	<u>4</u>	<u>6</u>	<u>7</u>	<u>0</u>	<u>1</u>	<u>4</u>	<u>3</u>	<u>7</u>
(B)	5	6	9	8	7	10	13	11	6	11
	<u>5</u>	<u>1</u>	<u>8</u>	<u>4</u>	<u>5</u>	<u>3</u>	<u>9</u>	<u>7</u>	<u>4</u>	<u>5</u>
(C)	6	11	5	7	10	12	2	9	8	9
	<u>3</u>	<u>2</u>	<u>4</u>	<u>7</u>	<u>6</u>	<u>3</u>	<u>1</u>	<u>3</u>	<u>5</u>	<u>2</u>

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
(D)	10	15	6	5	9	8	12	1	7	13
	<u>1</u>	<u>6</u>	<u>2</u>	<u>1</u>	<u>9</u>	<u>2</u>	<u>9</u>	<u>0</u>	<u>2</u>	<u>6</u>
(E)	14	13	10	9	4	3	15	8	5	11
	<u>7</u>	<u>8</u>	<u>4</u>	<u>6</u>	<u>3</u>	<u>0</u>	<u>9</u>	<u>1</u>	<u>0</u>	<u>3</u>

New Addition Facts

Add 19 and 5.

19 What are 9 and 5? Write ? . Carry ? .
5 What are ? and 1?

What is the sum of 19 and 5?

19 To add 19 and 5, think, "9 and 5 are 14."
5 Write 4; carry 1.
24 Think, "1 and 1 are 2." Write 2.
Then, 19 and 5 are 24.

Add 29 and 5.

29 What are 9 and 5? Write ? . Carry ? .
5 What are ? and 2? Write ? .
What is the sum of 29 and 5?

29 To add 29 and 5, think, "9 and 5 are 14."
5 Write 4; carry 1.
34 Think, "1 and 2 are 3." Write 3.
Then, 29 and 5 are 34.

Are these added right?

9	19	29	39	49
<u>5</u>	<u>5</u>	<u>5</u>	<u>5</u>	<u>5</u>
14	24	34	44	54

9 and 5 are 14

19 and 5 are 24

29 and 5 are 34

39 and 5 are 44

49 and 5 are 54

If 5 is added to a number ending in 9, with what number does the sum always end? Is the number of tens in the sum just the same as the number of tens in the number? How many more tens are there in the sum than in the number?

If 5 is added to a number ending in 9, the number of tens in the sum is 1 more than the number of tens in the number and the sum always ends in 4.

Are these added right?

$$\begin{array}{r} 9 \\ 7 \\ \hline 16 \end{array}$$

$$\begin{array}{r} 19 \\ 7 \\ \hline 26 \end{array}$$

$$\begin{array}{r} 29 \\ 7 \\ \hline 36 \end{array}$$

$$\begin{array}{r} 39 \\ 7 \\ \hline 46 \end{array}$$

$$\begin{array}{r} 49 \\ 7 \\ \hline 56 \end{array}$$

How many are 9 and 7? 19 and 7? 29 and 7? 39 and 7? 49 and 7?

If you add 7 to a number ending in 9, with what number does the sum always end? Are the tens the same? Can you tell easily what the tens in the sum should be? How?

How many are 8 and 5? 18 and 5? 28 and 5? 38 and 5? 48 and 5?

If you add 5 to a number ending in 8, with what number does the sum always end? Do the tens stay the same? How can you tell what the tens in the sum should be?

Think the sums for these:

5 and 5 are 10	2 and 9 are 11	4 and 9 are 13
15 and 5 are 20	12 and 9 are 21	14 and 9 are $__?$
25 and 5 are 30	22 and 9 are $__?$	24 and 9 are $__?$
35 and 5 are $__?$	32 and 9 are $__?$	34 and 9 are $__?$
45 and 5 are $__?$	42 and 9 are $__?$	44 and 9 are $__?$

In the same way, think the sums for 1, 11, 21, 31, 41 and 9; 2, 12, 22, 32, 42 and 8; 3, 13, 23, 33, 43 and 7.

Now add 8 to each of the numbers 3, 13, 23, 33, and 43, thinking, "3 and 8 are 11, 13 and 8 are 21, 23 and 8 are 31," and so on.

Now add 9 to 13, 23, 33, and 43 in the same way.

In the same way, think the sums if you add each of the numbers 6, 7, and 8 to the numbers 4, 14, 24, 34, and 44.

In the same way, think the sums if you add each of the numbers 6, 7, 8, and 9 to the numbers 5, 15, 25, 35, and 45.

Think the sums for these:

$6 + 4 = 10$	$6 + 5 = 11$	$6 + 6 = __?$	$6 + 7 = __?$
$16 + 4 = 20$	$16 + 5 = __?$	$16 + 6 = __?$	$16 + 7 = __?$
$26 + 4 = __?$	$26 + 5 = __?$	$26 + 6 = __?$	$26 + 7 = __?$
$36 + 4 = __?$	$36 + 5 = __?$	$36 + 6 = __?$	$36 + 7 = __?$
$46 + 4 = __?$	$46 + 5 = __?$	$46 + 6 = __?$	$46 + 7 = __?$
$6 + 8 = __?$	$6 + 9 = __?$	$7 + 3 = __?$	$7 + 4 = __?$
$16 + 8 = __?$	$16 + 9 = __?$	$17 + 3 = __?$	$17 + 4 = __?$
$26 + 8 = __?$	$26 + 9 = __?$	$27 + 3 = __?$	$27 + 4 = __?$
$36 + 8 = __?$	$36 + 9 = __?$	$37 + 3 = __?$	$37 + 4 = __?$
$46 + 8 = __?$	$46 + 9 = __?$	$47 + 3 = __?$	$47 + 4 = __?$

Addition Practice

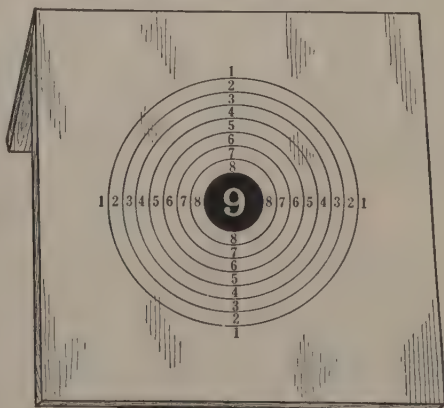
Think the sums for these this way: "7 and 5 are 12, 38 and 2 are 40, 29 and 4 are 33," and so on.

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
(A)	$\begin{array}{r} 7 \\ 5 \\ \hline \end{array}$	$\begin{array}{r} 38 \\ 2 \\ \hline \end{array}$	$\begin{array}{r} 29 \\ 4 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ 1 \\ \hline \end{array}$	$\begin{array}{r} 39 \\ 5 \\ \hline \end{array}$	$\begin{array}{r} 38 \\ 7 \\ \hline \end{array}$	$\begin{array}{r} 39 \\ 6 \\ \hline \end{array}$	$\begin{array}{r} 28 \\ 4 \\ \hline \end{array}$	$\begin{array}{r} 29 \\ 8 \\ \hline \end{array}$	$\begin{array}{r} 37 \\ 8 \\ \hline \end{array}$
(B)	$\begin{array}{r} 47 \\ 8 \\ \hline \end{array}$	$\begin{array}{r} 17 \\ 5 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ 7 \\ \hline \end{array}$	$\begin{array}{r} 39 \\ 4 \\ \hline \end{array}$	$\begin{array}{r} 19 \\ 1 \\ \hline \end{array}$	$\begin{array}{r} 39 \\ 3 \\ \hline \end{array}$	$\begin{array}{r} 48 \\ 7 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ 9 \\ \hline \end{array}$	$\begin{array}{r} 38 \\ 4 \\ \hline \end{array}$	$\begin{array}{r} 29 \\ 2 \\ \hline \end{array}$
(C)	$\begin{array}{r} 48 \\ 2 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ 9 \\ \hline \end{array}$	$\begin{array}{r} 27 \\ 5 \\ \hline \end{array}$	$\begin{array}{r} 17 \\ 7 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ 5 \\ \hline \end{array}$	$\begin{array}{r} 29 \\ 1 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ 8 \\ \hline \end{array}$	$\begin{array}{r} 49 \\ 3 \\ \hline \end{array}$	$\begin{array}{r} 19 \\ 9 \\ \hline \end{array}$	$\begin{array}{r} 48 \\ 4 \\ \hline \end{array}$
(D)	$\begin{array}{r} 39 \\ 2 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ 3 \\ \hline \end{array}$	$\begin{array}{r} 17 \\ 9 \\ \hline \end{array}$	$\begin{array}{r} 37 \\ 5 \\ \hline \end{array}$	$\begin{array}{r} 27 \\ 7 \\ \hline \end{array}$	$\begin{array}{r} 18 \\ 5 \\ \hline \end{array}$	$\begin{array}{r} 39 \\ 1 \\ \hline \end{array}$	$\begin{array}{r} 18 \\ 8 \\ \hline \end{array}$	$\begin{array}{r} 49 \\ 4 \\ \hline \end{array}$	$\begin{array}{r} 39 \\ 7 \\ \hline \end{array}$
(E)	$\begin{array}{r} 8 \\ 9 \\ \hline \end{array}$	$\begin{array}{r} 49 \\ 2 \\ \hline \end{array}$	$\begin{array}{r} 18 \\ 3 \\ \hline \end{array}$	$\begin{array}{r} 27 \\ 9 \\ \hline \end{array}$	$\begin{array}{r} 47 \\ 5 \\ \hline \end{array}$	$\begin{array}{r} 37 \\ 7 \\ \hline \end{array}$	$\begin{array}{r} 28 \\ 5 \\ \hline \end{array}$	$\begin{array}{r} 49 \\ 1 \\ \hline \end{array}$	$\begin{array}{r} 28 \\ 8 \\ \hline \end{array}$	$\begin{array}{r} 49 \\ 6 \\ \hline \end{array}$
(F)	$\begin{array}{r} 9 \\ 4 \\ \hline \end{array}$	$\begin{array}{r} 18 \\ 9 \\ \hline \end{array}$	$\begin{array}{r} 38 \\ 6 \\ \hline \end{array}$	$\begin{array}{r} 28 \\ 3 \\ \hline \end{array}$	$\begin{array}{r} 37 \\ 9 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ 6 \\ \hline \end{array}$	$\begin{array}{r} 47 \\ 7 \\ \hline \end{array}$	$\begin{array}{r} 38 \\ 5 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ 2 \\ \hline \end{array}$	$\begin{array}{r} 38 \\ 8 \\ \hline \end{array}$
(G)	$\begin{array}{r} 48 \\ 8 \\ \hline \end{array}$	$\begin{array}{r} 19 \\ 4 \\ \hline \end{array}$	$\begin{array}{r} 28 \\ 9 \\ \hline \end{array}$	$\begin{array}{r} 48 \\ 6 \\ \hline \end{array}$	$\begin{array}{r} 38 \\ 3 \\ \hline \end{array}$	$\begin{array}{r} 47 \\ 9 \\ \hline \end{array}$	$\begin{array}{r} 17 \\ 6 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ 8 \\ \hline \end{array}$	$\begin{array}{r} 48 \\ 5 \\ \hline \end{array}$	$\begin{array}{r} 19 \\ 2 \\ \hline \end{array}$
(H)	$\begin{array}{r} 9 \\ 5 \\ \hline \end{array}$	$\begin{array}{r} 19 \\ 7 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ 3 \\ \hline \end{array}$	$\begin{array}{r} 38 \\ 9 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ 7 \\ \hline \end{array}$	$\begin{array}{r} 48 \\ 3 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ 2 \\ \hline \end{array}$	$\begin{array}{r} 27 \\ 6 \\ \hline \end{array}$	$\begin{array}{r} 17 \\ 8 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ 6 \\ \hline \end{array}$

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
(I)	18	19	9	19	48	18	8	18	37	27
	<u>6</u>	<u>5</u>	<u>6</u>	<u>3</u>	<u>9</u>	<u>7</u>	<u>4</u>	<u>2</u>	<u>6</u>	<u>8</u>
(J)	49	9	29	19	29	39	28	29	28	49
	<u>5</u>	<u>8</u>	<u>5</u>	<u>6</u>	<u>3</u>	<u>8</u>	<u>7</u>	<u>7</u>	<u>2</u>	<u>9</u>
(K)	49	28	9	19	29	49	29	18	39	47
	<u>7</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>6</u>	<u>8</u>	<u>9</u>	<u>4</u>	<u>9</u>	<u>6</u>

Playing Bean Bag

Harry, Dick, James, Mary, and Daisy played four games of bean bag. They had a board like the one shown at the right, with a round hole in the center and circles around it. Standing about 10 feet from the board, each tossed five bean bags. A bag in the hole in the center counted 9 points; a bag in the circle next to the hole counted 8 points; a bag in the next circle counted 7 points; a bag in the next circle counted 6 points; and so on. A bag on the board outside the largest circle counted 1 point. Their scores are given on pages 120 and 121.



FIRST GAME

Harry	Dick	James	Mary	Daisy
8	7	7	6	6
0	0	1	2	0
5	4	2	1	6
2	5	4	6	5
<u>3</u>	<u>8</u>	<u>5</u>	<u>7</u>	<u>9</u>

What was the score of each? Who won?

SECOND GAME

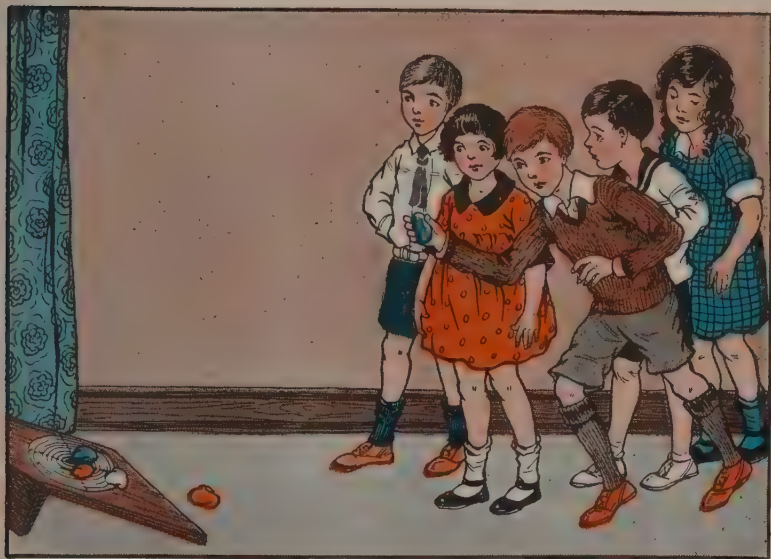
Harry	Dick	James	Mary	Daisy
6	5	5	2	3
1	1	3	1	4
2	3	4	8	7
7	8	2	3	1
<u>9</u>	<u>7</u>	<u>7</u>	<u>9</u>	<u>8</u>

What was the score of each? Who won the second game?

THIRD GAME

Harry	Dick	James	Mary	Daisy
2	5	0	5	0
2	0	7	2	5
9	6	6	3	9
3	2	0	5	0
<u>4</u>	<u>5</u>	<u>8</u>	<u>4</u>	<u>4</u>

What was the score of each? Who won this third game?



FOURTH GAME

Harry's scores were 1, 3, 4, 1, 8; Dick's, 0, 2, 7, 4, 9; James's, 2, 0, 9, 6, 3; Mary's, 3, 2, 4, 0, 9; and Daisy's, 4, 2, 5, 4, 9. Find each score. Who won? Who won the most games?

Subtraction Practice

Subtract, and write on a folded paper the differences for the examples here and at the top of page 122.

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
(A)	6	11	12	9	14	16	2	13	9	1
	<u>6</u>	<u>9</u>	<u>7</u>	<u>0</u>	<u>6</u>	<u>8</u>	<u>2</u>	<u>7</u>	<u>5</u>	<u>1</u>
(B)	14	10	18	4	12	9	0	15	6	4
	<u>9</u>	<u>5</u>	<u>9</u>	<u>0</u>	<u>4</u>	<u>1</u>	<u>0</u>	<u>7</u>	<u>5</u>	<u>4</u>

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
(C)	16	12	5	11	13	11	6	10	7	16
	<u>9</u>	<u>5</u>	<u>3</u>	<u>8</u>	<u>4</u>	<u>6</u>	<u>0</u>	<u>8</u>	<u>6</u>	<u>7</u>
(D)	7	10	14	3	5	17	4	17	7	15
	<u>0</u>	<u>9</u>	<u>5</u>	<u>3</u>	<u>2</u>	<u>9</u>	<u>2</u>	<u>8</u>	<u>3</u>	<u>8</u>
(E)	13	7	8	4	11	2	12	8	3	14
	<u>5</u>	<u>1</u>	<u>8</u>	<u>1</u>	<u>4</u>	<u>0</u>	<u>8</u>	<u>7</u>	<u>2</u>	<u>8</u>

Carrying Once, from the Ones' Place

Add 527 and 456.

Write 456 under 527, as shown at the left.

527 Think, "7 and 6 are 13." Write 3; carry 1.

456 Think, "1 and 2 are 3, and 5 are 8." Write 8.

983 Think, "5 and 4 are 9." Write 9.

Then, 527 and 456 are 983.

Addition Practice

Here are some examples like the one just explained. Look out for the carrying number.

	1.	2.	3.	4.	5.	6.
(A)	335	526	438	145	536	317
	<u>125</u>	<u>419</u>	<u>239</u>	<u>128</u>	<u>107</u>	<u>219</u>
(B)	129	245	539	417	145	426
	<u>406</u>	<u>246</u>	<u>318</u>	<u>107</u>	<u>219</u>	<u>428</u>
(C)	438	229	245	519	307	146
	<u>348</u>	<u>345</u>	<u>137</u>	<u>247</u>	<u>308</u>	<u>306</u>

Carrying Once, from the Tens' Place

Add 472 and 364.

Write 364 under 472.

472 Think, "2 and 4 are 6." Write 6.

364 Think, "7 and 6 are 13." Write 3; carry 1.

 836 Think, "1 and 4 are 5, and 3 are 8." Write 8.
 Then, 472 and 364 are 836.
Addition Practice

Write the sums for these examples on a folded paper.

	1.	2.	3.	4.	5.	6.
(A)	240 <u>265</u>	321 <u>592</u>	490 <u>386</u>	440 <u>292</u>	294 <u>654</u>	320 <u>589</u>
(B)	191 <u>598</u>	240 <u>370</u>	311 <u>393</u>	390 <u>177</u>	430 <u>173</u>	391 <u>246</u>
(C)	431 <u>391</u>	291 <u>127</u>	240 <u>481</u>	291 <u>534</u>	390 <u>468</u>	430 <u>484</u>

General Practice 4

Write the answers on a sheet of paper. Time allowed: 4 minutes.

1.	2.	3.	4.
1 + 7 =	10 less 6 =	9 - 3 =	2 and 2 are
5.	6.	7.	8.
1 from 2 is	5 plus 6 =	5 and _?_ are 8	Add: 4 <u>4</u>

9.	10.	11.	12.
Subtract: 9 2 <u> </u>	$7 + 2 =$	The sum of 6 and 1 is	$5 - 4 =$

Carrying Twice

Add 578 and 265.

Write 265 under 578.

578 Think, "8 and 5 are 13." Write 3; carry 1.

265 Think, "1 and 7 are 8, and 6 are 14." Write 4;

843 carry 1.

Think, "1 and 5 are 6, and 2 are 8." Write 8.

Then, 578 and 265 are 843.

Addition Practice

Write the sums for these examples on a folded paper.

	1.	2.	3.	4.	5.	6.
(A)	389 <u>581</u>	196 <u>276</u>	195 <u>365</u>	275 <u>637</u>	536 <u>384</u>	386 <u>457</u>
(B)	257 <u>267</u>	184 <u>728</u>	393 <u>247</u>	176 <u>485</u>	178 <u>563</u>	394 <u>386</u>
(C)	458 <u>284</u>	498 <u>357</u>	196 <u>628</u>	247 <u>374</u>	227 <u>485</u>	289 <u>563</u>

Carrying Once or Twice

Did you ever notice that two examples may look as if they are exactly the same kind of example, but that when you come to work them there is something in

one of them that is not in the other at all? For example, are these examples exactly the same kind?

Add:

1.	2.	3.	4.
432	538	659	189
<u>105</u>	<u>237</u>	<u>290</u>	<u>753</u>

If you add these examples, you will find that example 1 does not have any carrying at all; example 2 has carrying in the ones' column only; example 3 has carrying in the tens' column, but not in the ones' column; and example 4 has carrying in both the ones' and tens' columns. Are any two of these examples exactly the same kind? From now on you must watch for differences such as these in examples so that you will not make any mistakes.

Addition Practice

In some of the examples in this lesson there is no carrying at all; in some of them you will carry in the ones' column only; in some of them you will carry in the tens' column only; and in some of them you will carry in both the ones' and tens' columns. Watch for these carrying numbers. Write the sums on a folded paper.

	1.	2.	3.	4.	5.	6.
(A)	310	329	481	407	417	579
	<u>536</u>	<u>352</u>	<u>141</u>	<u>221</u>	<u>263</u>	<u>276</u>
(B)	239	460	458	371	485	242
	<u>434</u>	<u>313</u>	<u>432</u>	<u>242</u>	<u>275</u>	<u>254</u>

	1.	2.	3.	4.	5.	6.
(C)	182	293	634	169	262	398
	<u>353</u>	<u>251</u>	<u>203</u>	<u>423</u>	<u>441</u>	<u>296</u>
(D)	496	296	471	515	187	238
	<u>475</u>	<u>686</u>	<u>254</u>	<u>342</u>	<u>486</u>	<u>343</u>

Problems

1. Mary had 5 pencils, but she lost 4 pencils. How many pencils had she left?

2. While delivering ice one summer morning, one iceman carried ice to 28 houses while his helper carried ice to 15 other houses. To how many houses did both men carry ice?

3. Robert had 9 marbles, but he gave 4 marbles to his cousin Ed. How many marbles had Robert left?

4. There are 413 boys and 381 girls in a school. How many boys and girls are there all together?

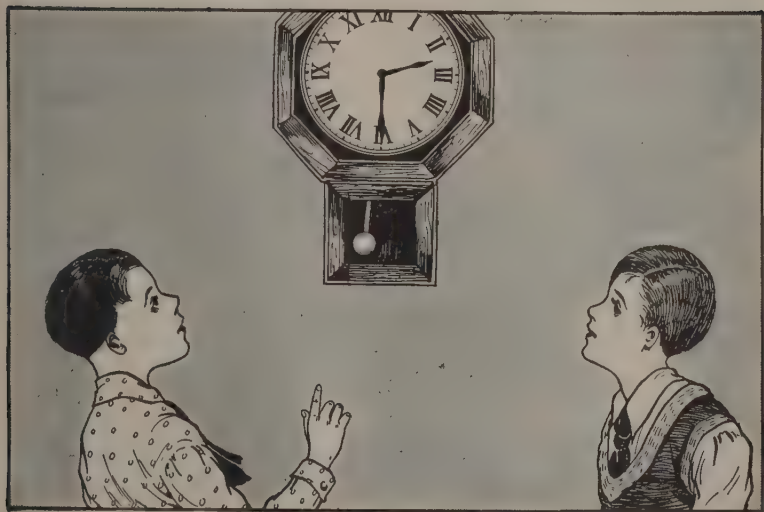
5. Ruth's doll has several colored dresses and a few white dresses. How can Ruth find out how many dresses her doll has all together?

6. If you had 6 cents in a bank and you put 5 more cents into the bank, how could you find out how many cents were then in the bank?

7. Joseph picked 7 apples and gave 2 apples to his brother Philip. How many apples did Joseph have left?

8. Dick received 5 story books for his birthday. After he had read them, he gave 2 of the books to his cousin Jack. How many of these story books did Dick have left?

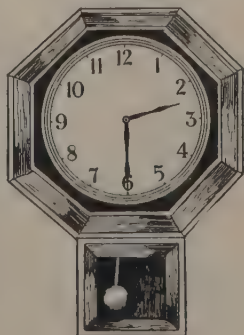
Telling Time in Half Hours

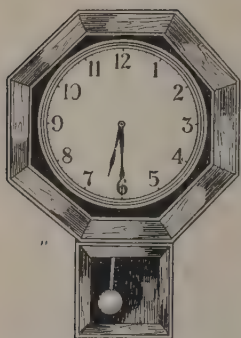


1. You have already learned how to tell what hour it is. You remember, when the hour hand points to 9 and the minute hand points to 12, it is nine o'clock. Other hours, you know, are told in the same way. Now you will learn how to tell time in half hours.

2. What is the short hand on a clock called? What is the long hand on a clock called?

3. When the minute hand points to 6 and the hour hand is halfway between 2 and 3, it is half past two o'clock, or we may say it is 2:30, which is read "two thirty." 2:30 means that it is thirty minutes past 2 o'clock.



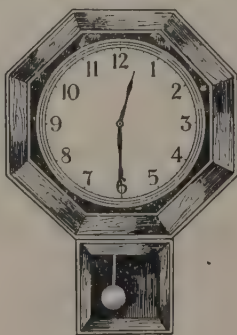
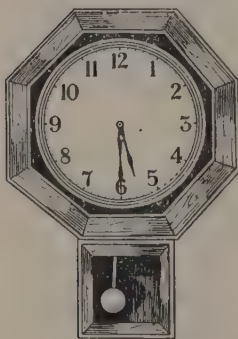


4. When the minute hand points to 6 and the hour hand is halfway between 6 and 7, it is half past six o'clock, or 6:30 o'clock.

5. On a toy clock, show where the hands are at half past eleven; half past three; half past four; half past ten; at 10:30; at 4:30; at 7:30.

6. Tell where the hands are at half past one; half past seven; half past nine; at 2:30; at 6:30.

7. What is the time on each of these clocks?



8. How many hours is it from half past eight o'clock, A.M., until half past eleven o'clock, A.M.? From half past one o'clock, P.M., until half past five o'clock, P.M.?

9. How many hours is it from half past nine o'clock, A.M., until half past two o'clock, P.M.?

Review

On page 129 is a review of what you have been studying. Write the numbers 1 to 10 on a sheet of

paper. After each number you have written, write the answer to the question that has the same number.

At the end of each question you will see a page number. If you missed any part of the test, turn back to the page number given after that part of the test, where you will find how to answer what you missed. Study what you missed until you are sure you know what to do. Then go back to the review and again try the part you missed. Do this until you do not miss anything or until your teacher tells you to work on something else.

1. How many cents are there in 1 dime? (Page 107)

2. How many tens and how many ones are there in 24? (Page 108)

3. How many dimes and how many cents are there in 37 cents? (Page 108)

4. What number is carried in adding these numbers? 45

26 (Page 108)

5. How many times do you need to carry in adding these numbers? 426

374 (Page 124)

6. If the sum of the first column in an addition example is 34, what number do you carry? (Page 112)

7. If 5 is added to a number ending in 9, with what number will the sum end? (Page 116)

8. Which is the minute hand on a clock? (Page 92)

9. Tell in two ways what time it is when the hour hand is halfway between 4 and 5 and the minute hand is at 6. (Page 127)

10. If 8 is added to a number ending in 3, with what number will the sum end? (Page 117)

CHAPTER VII

BORROWING IN SUBTRACTION

Getting Ready to Borrow from the Tens

"25 cents is 2 dimes and 5 cents; or 25 cents is 1 dime and 15 cents.

Think the right answers for these:

1. 34 cents is 2 dimes and 14 cents.
2. 53 cents is 4 dimes and ___?___ cents.
3. 65 cents is 5 dimes and ___?___ cents.
4. 92 cents is 8 dimes and ___?___ cents.
5. 76 cents is 6 dimes and ___?___ cents.
6. 28 cents is 1 dime and ___?___ cents.
7. 47 cents is ___?___ dimes and 17 cents.
8. 73 cents is ___?___ dimes and 13 cents.
9. 85 cents is ___?___ dimes and 15 cents.
10. 52 cents is ___?___ dimes and 12 cents.
11. 64 cents is ___?___ dimes and 14 cents.
12. 34 is 2 tens and 14 ones.
13. 53 is 4 tens and ___?___ ones.
14. 65 is 5 tens and ___?___ ones.
15. 92 is 8 tens and ___?___ ones.
16. 76 is 6 tens and ___?___ ones.
17. 28 is 1 ten and ___?___ ones.
18. 47 is ___?___ tens and 17 ones.
19. 73 is ___?___ tens and 13 ones.
20. 85 is ___?___ tens and 15 ones.
21. 52 is ___?___ tens and 12 ones.
22. 64 is ___?___ tens and 14 ones.

Borrowing from the Tens

Subtract 27 cents from 45 cents.

Write 27 under 45.

We cannot take 7 cents from 5 cents; so think of the 45 cents as changed to 3 dimes and 15 cents. Think, "Borrow 1." By this we mean to take 1 dime from the 4 dimes, leaving 3 dimes, and add 10 cents to the 5 cents, giving 15 cents. Now think, "7 cents from 15 cents are 8 cents." Write 8 in the cents' column.

Then think, "2 dimes from 3 dimes (not 4 dimes) is 1 dime." Write 1 in the dimes' column.

Then, 27 cents from 45 cents are 18 cents.

Subtract 14 from 72.

72 4 from 12 = ?

14 1 from 6 = ?

72 = 7 tens + 2 ones, or 6 tens + 12 ones = 60 + 12

14 = $\frac{1 \text{ ten} + 4 \text{ ones} = 10 + 4}{5 \text{ tens} + 8 \text{ ones} = 50 + 8}$

58 =

In subtracting 14 from 72, we cannot take 4 ones from 2 ones; so we take 1 ten from the 7 tens, leaving 6 tens, and add 1 ten, or 10 ones, to the 2 ones, giving 12 ones. Then we take 4 ones from 12 ones, leaving 8 ones. Then we take 1 ten from the 6 tens, leaving 5 tens.

To subtract 14 from 72, think, "4 from 12 are 8." Write 8 in the ones' column. Think, "1 from 6 are 5." Write 5 in the tens' column.

Then, $72 - 14 = 58$.

Problems

1. The teacher of the third grade bought 34 arithmetic practice books for the pupils in her class. The first day she sold 18 of them. How many pupils did not get their books the first day?

2. Arthur had 72 cents in his savings bank. One day, while he was throwing snowballs, Arthur carelessly broke a neighbor's window. To teach Arthur that he should always be careful, Arthur's father told him that he would have to pay for the window out of his own money. It cost Arthur 58 cents to have the window fixed. How much money did he have left?

3. Edward weighs 81 pounds, while Fred weighs only 56 pounds. Edward is how many pounds heavier than Fred?

4. Mary Louise and Betty Jane are saving their money for Christmas. Mary Louise has saved 92 cents, and Betty Jane has saved 68 cents. How much more has Mary Louise saved for Christmas than Betty Jane?

5. Ruth wants to buy a purse that will cost 85 cents. She has saved 57 cents. How much more money does she need?

Getting Ready for Subtraction Practice

1. Are these subtracted right?

81	42	52	75	95
12	26	37	39	57
<u>69</u>	<u>16</u>	<u>15</u>	<u>36</u>	<u>38</u>

2. How many are 9 less 1? 4 less 1? 2 less 1? 5 less 1? 8 less 1? 3 less 1? 7 less 1? 6 less 1?

3. How many are 10 and 4? 10 and 6? 10 and 8?
 10 and 1? 10 and 3? 10 and 0? 10 and 2? 10 and 5?
 10 and 7?

Subtraction Practice

Do not copy. Place a folded paper under these examples. Subtract, and write the differences on the folded sheet. In working the first example, think, "1 from 10 are 9." Write 9. Then think, "2 from 8 are 6." Write 6. Do the others in the same way. In example 6A, do not write 06. Just write the 6. Do the same for any other examples like this.

	1.	2.	3.	4.	5.	6.	7.
(A)	90 <u>21</u>	71 <u>58</u>	81 <u>16</u>	82 <u>27</u>	70 <u>14</u>	23 <u>17</u>	93 <u>24</u>
(B)	73 <u>34</u>	40 <u>15</u>	65 <u>17</u>	31 <u>29</u>	70 <u>28</u>	91 <u>33</u>	56 <u>17</u>
(C)	80 <u>32</u>	80 <u>61</u>	56 <u>39</u>	23 <u>18</u>	75 <u>37</u>	73 <u>35</u>	90 <u>67</u>
(D)	47 <u>28</u>	42 <u>19</u>	90 <u>86</u>	48 <u>29</u>	41 <u>38</u>	98 <u>49</u>	61 <u>22</u>

Addition Practice

Add, and write the sums on a folded paper.

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
(A)	14 <u>3</u>	10 <u>0</u>	13 <u>6</u>	12 <u>2</u>	11 <u>4</u>	14 <u>8</u>	10 <u>5</u>	14 <u>1</u>	12 <u>7</u>	11 <u>9</u>

134 The Dollar and the Half Dollar

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
(B)	<u>11</u> <u>0</u>	<u>14</u> <u>4</u>	<u>10</u> <u>1</u>	<u>13</u> <u>7</u>	<u>12</u> <u>3</u>	<u>11</u> <u>5</u>	<u>14</u> <u>9</u>	<u>10</u> <u>6</u>	<u>14</u> <u>2</u>	<u>12</u> <u>8</u>
(C)	<u>12</u> <u>9</u>	<u>11</u> <u>1</u>	<u>14</u> <u>5</u>	<u>10</u> <u>2</u>	<u>13</u> <u>8</u>	<u>12</u> <u>4</u>	<u>11</u> <u>6</u>	<u>13</u> <u>0</u>	<u>10</u> <u>7</u>	<u>13</u> <u>3</u>
(D)	<u>13</u> <u>4</u>	<u>12</u> <u>0</u>	<u>11</u> <u>2</u>	<u>14</u> <u>6</u>	<u>10</u> <u>3</u>	<u>13</u> <u>9</u>	<u>12</u> <u>5</u>	<u>11</u> <u>7</u>	<u>13</u> <u>1</u>	<u>10</u> <u>8</u>
(E)	<u>10</u> <u>9</u>	<u>13</u> <u>5</u>	<u>12</u> <u>1</u>	<u>11</u> <u>3</u>	<u>14</u> <u>7</u>	<u>10</u> <u>4</u>	<u>14</u> <u>0</u>	<u>12</u> <u>6</u>	<u>11</u> <u>8</u>	<u>13</u> <u>2</u>

United States Money — The Dollar and the Half Dollar

You have already learned about the cent, the nickel, the dime, and the quarter. At the left is a picture



of another coin. This coin is made of silver and is called a **dollar**. It is worth 100 cents, or 10 dimes.

$10 \text{ cents} = 1 \text{ dime}$ $10 \text{ dimes} = 1 \text{ dollar}$
--

The other picture on page 134 shows another coin that is made of silver. It is a **half dollar**. Its value is 50 cents. It takes 2 half dollars to make a dollar. A half dollar is also called a **fifty-cent piece**.

$5 \text{ dimes} = 1 \text{ half dollar}$

Reading and Writing Dollars and Cents

1. The sign \$ is used for **dollars**. Thus, four dollars may be written as \$4; twenty dollars, as \$20; one hundred forty-five dollars, as \$145.

2. You already know that the sign ¢ is used for **cents**. Thus, five cents may be written as 5¢; twenty-five cents, as 25¢; ninety-eight cents, as 98¢.

3. When dollars and cents are written together, the dollars and cents are separated by a point called a **decimal point** (.). Thus, four dollars and twenty-five cents may be written as \$4.25; nine dollars and twenty cents, as \$9.20; seventy-four dollars and fifty cents, as \$74.50. \$3 or \$3.00 is read "three dollars and no cents" or just "three dollars."

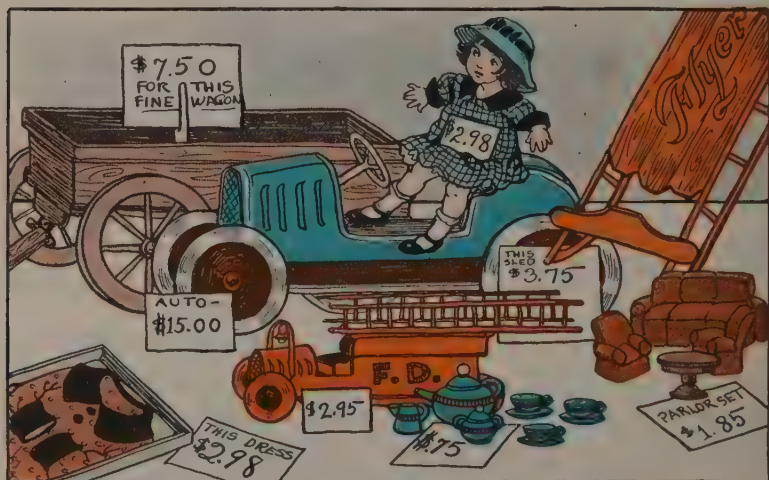
4. Twenty-five cents may also be written as \$.25, which means \$0.25, or no dollars and twenty-five cents. Eighty cents may be written as \$.80; five cents may be written as \$.05.

136 Reading and Writing Dollars and Cents

Practice in Reading and Writing Dollars and Cents

Write in figures, using the dollar sign and the decimal point:

1. Two dollars and eighteen cents
2. Thirty-four cents
3. Six dollars and ninety-five cents
4. Eighty-four dollars and thirty cents
5. Seven cents
6. Two hundred thirty-nine dollars and fifty-six cents
7. Read the prices of the articles in the picture.



Now read these:

8. \$3.75; \$34.50; \$3875.50; \$9875.98
9. \$.89; \$5.00; \$629.08; \$359.65
10. \$14.30; \$400; \$8750; \$135
11. \$50.20; \$2000; \$375; \$10.00
12. \$159.05; \$3125; \$29.75; \$.60

Addition Practice

Add, and write the sums on a folded paper.

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
(A)	$\begin{array}{r} 16 \\ 5 \\ \hline \end{array}$	$\begin{array}{r} 19 \\ 4 \\ \hline \end{array}$	$\begin{array}{r} 17 \\ 3 \\ \hline \end{array}$	$\begin{array}{r} 15 \\ 0 \\ \hline \end{array}$	$\begin{array}{r} 18 \\ 7 \\ \hline \end{array}$	$\begin{array}{r} 19 \\ 9 \\ \hline \end{array}$	$\begin{array}{r} 17 \\ 8 \\ \hline \end{array}$	$\begin{array}{r} 19 \\ 7 \\ \hline \end{array}$	$\begin{array}{r} 15 \\ 5 \\ \hline \end{array}$	$\begin{array}{r} 16 \\ 4 \\ \hline \end{array}$
(B)	$\begin{array}{r} 18 \\ 3 \\ \hline \end{array}$	$\begin{array}{r} 16 \\ 6 \\ \hline \end{array}$	$\begin{array}{r} 19 \\ 3 \\ \hline \end{array}$	$\begin{array}{r} 17 \\ 4 \\ \hline \end{array}$	$\begin{array}{r} 15 \\ 1 \\ \hline \end{array}$	$\begin{array}{r} 18 \\ 8 \\ \hline \end{array}$	$\begin{array}{r} 16 \\ 0 \\ \hline \end{array}$	$\begin{array}{r} 19 \\ 6 \\ \hline \end{array}$	$\begin{array}{r} 17 \\ 9 \\ \hline \end{array}$	$\begin{array}{r} 15 \\ 6 \\ \hline \end{array}$
(C)	$\begin{array}{r} 15 \\ 7 \\ \hline \end{array}$	$\begin{array}{r} 18 \\ 4 \\ \hline \end{array}$	$\begin{array}{r} 16 \\ 7 \\ \hline \end{array}$	$\begin{array}{r} 19 \\ 2 \\ \hline \end{array}$	$\begin{array}{r} 17 \\ 5 \\ \hline \end{array}$	$\begin{array}{r} 15 \\ 2 \\ \hline \end{array}$	$\begin{array}{r} 18 \\ 0 \\ \hline \end{array}$	$\begin{array}{r} 16 \\ 1 \\ \hline \end{array}$	$\begin{array}{r} 18 \\ 9 \\ \hline \end{array}$	$\begin{array}{r} 17 \\ 0 \\ \hline \end{array}$
(D)	$\begin{array}{r} 17 \\ 1 \\ \hline \end{array}$	$\begin{array}{r} 15 \\ 8 \\ \hline \end{array}$	$\begin{array}{r} 18 \\ 5 \\ \hline \end{array}$	$\begin{array}{r} 16 \\ 8 \\ \hline \end{array}$	$\begin{array}{r} 19 \\ 1 \\ \hline \end{array}$	$\begin{array}{r} 17 \\ 6 \\ \hline \end{array}$	$\begin{array}{r} 15 \\ 3 \\ \hline \end{array}$	$\begin{array}{r} 18 \\ 1 \\ \hline \end{array}$	$\begin{array}{r} 16 \\ 2 \\ \hline \end{array}$	$\begin{array}{r} 19 \\ 8 \\ \hline \end{array}$
(E)	$\begin{array}{r} 19 \\ 5 \\ \hline \end{array}$	$\begin{array}{r} 17 \\ 2 \\ \hline \end{array}$	$\begin{array}{r} 15 \\ 9 \\ \hline \end{array}$	$\begin{array}{r} 18 \\ 6 \\ \hline \end{array}$	$\begin{array}{r} 16 \\ 9 \\ \hline \end{array}$	$\begin{array}{r} 19 \\ 0 \\ \hline \end{array}$	$\begin{array}{r} 17 \\ 7 \\ \hline \end{array}$	$\begin{array}{r} 15 \\ 4 \\ \hline \end{array}$	$\begin{array}{r} 18 \\ 2 \\ \hline \end{array}$	$\begin{array}{r} 16 \\ 3 \\ \hline \end{array}$

Getting Ready to Borrow from the Hundreds

Think the right answers for these:

1. \$9.75 = 9 dollars, 7 dimes, and 5 cents; or \$9.75 = 8 dollars, 17 dimes, and 5 cents.
2. \$4.38 = 3 dollars, 13 dimes, and 8 cents.
3. \$6.42 = 5 dollars, ___?___ dimes, and 2 cents.
4. \$2.89 = 1 dollar, ___?___ dimes, and 9 cents.
5. \$5.37 = 4 dollars, ___?___ dimes, and 7 cents.
6. \$3.56 = 2 dollars, ___?___ dimes, and 6 cents.

7. \$7.25 = 6 dollars, ? dimes, and 5 cents.
8. \$8.36 = ? dollars, 13 dimes, and 6 cents.
9. \$3.85 = ? dollars, 18 dimes, and 5 cents.
10. \$9.27 = ? dollars, 12 dimes, and 7 cents.
11. \$6.43 = ? dollars, 14 dimes, and 3 cents.
12. \$2.74 = ? dollar, 17 dimes, and 4 cents.

Borrowing from the Hundreds

Subtract \$2.75 from \$9.18.

Write \$2.75 under \$9.18 so that the decimal points are in a column.

Then think, "5 cents from 8 cents are 3 cents."

Write 3 in the cents' column.

You cannot take 7 dimes from 1 dime; so think of 9 dollars and 1 dime as 8 dollars and 11 dimes.

Then think, "7 dimes from 11 dimes are 4 dimes."

Write 4 in the dimes' column.

Then think, "2 dollars from 8 dollars are 6 dollars."

Write 6 in the dollars' column.

Then, \$2.75 from \$9.18 are \$6.43.

Subtract 387 from 529.

529 7 from 9 = ?

387 8 from 12 = ?

 3 from 4 = ?

529 = 5 hundreds, 2 tens, and 9 ones; or

529 = 4 hundreds, 12 tens, and 9 ones.

529 = 4 hundreds, 12 tens, and 9 ones = $400 + 120 + 9$

387 = 3 hundreds, 8 tens, and 7 ones = $300 + 80 + 7$

142 = 1 hundred, 4 tens, and 2 ones = $100 + 40 + 2$

In subtracting 387 from 529, first write 387 under 529, with the ones under the ones, tens under the tens, and hundreds under the hundreds.

HUNDREDS
TENS
ONES

529

387

142

Think, "7 from 9 are 2." Write 2 in the ones' column.

Since we cannot take 8 tens from 2 tens, think of 5 hundreds and 2 tens as 4 hundreds and 12 tens.

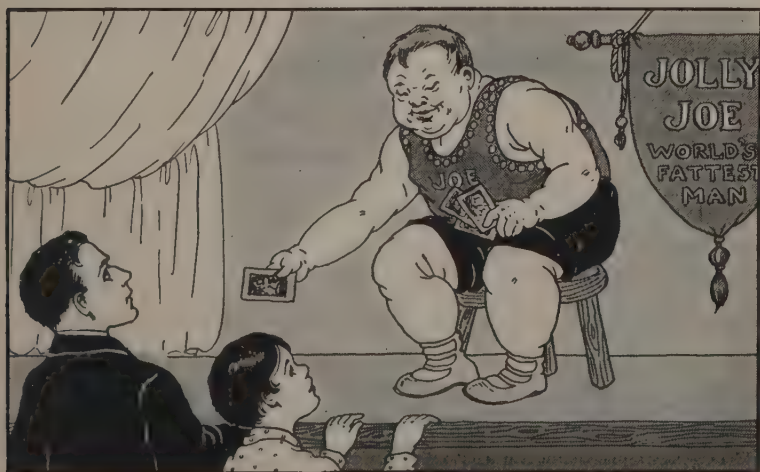
Then think, "8 from 12 are 4." Write 4 in the tens' column.

Then think, "3 from 4 is 1." Write 1 in the hundreds' column.

Then, 387 from 529 are 142.

Problems

1. Jack and his father went to the circus. In the side show, they saw the fattest man in the world.



Jack asked, "How much do you weigh?" "I weigh 623 pounds," said the fat man. Jack exclaimed, "My! that's a lot more than you weigh, isn't it, Father?" "Yes, I weigh only 192 pounds," said Jack's father. "When we get home, I will find out how much heavier he is than you are," said Jack. How much heavier was the fat man than Jack's father?

2. Thomas has only \$2.83, and he wants to buy a baseball outfit that costs \$4.75. His mother has promised to give him the rest of the money he needs to get the outfit if he will weed the garden all summer. How much money will he have to get for weeding the garden?

3. There are 365 days in a year. If 182 days have already gone by in a year, how many days are there left in that year?

4. A man had \$945 in the bank. If he drew out \$785 to pay for an automobile, how much money had he left in the bank?

5. Kate's father had a flock of 244 sheep. He sold 183 sheep. How many sheep had he left?

Subtraction Practice

Do not copy. Place a folded paper under the examples at the top of page 141. Subtract, and write the differences on the folded sheet. Prove. In example 2A, write \$72 instead of \$072. In example 2B, think, "5 from 8 are 3." Write 3. Then think, "8 from 16 are 8." Write 8. Then think, "Nothing from 8 are 8." Write 8. Do not forget to write the dollar signs (\$) and decimal points (.) in the right places.

	1.	2.	3.	4.	5.
(A)	339 <u>170</u>	\$159 <u>87</u>	425 <u>183</u>	\$205 <u>160</u>	647 <u>282</u>
(B)	853 <u>281</u>	\$968 <u>85</u>	926 <u>370</u>	\$914 <u>382</u>	288 <u>197</u>
(C)	536 <u>383</u>	859 <u>679</u>	\$476 <u>384</u>	724 <u>93</u>	964 <u>494</u>
(D)	786 <u>495</u>	\$6.86 <u>3.96</u>	\$7.75 <u>.94</u>	739 <u>647</u>	926 <u>245</u>
(E)	410 <u>270</u>	977 <u>594</u>	\$364 <u>270</u>	618 <u>495</u>	864 <u>93</u>
(F)	845 <u>592</u>	658 <u>596</u>	\$8.67 <u>5.85</u>	958 <u>476</u>	\$7.09 <u>5.16</u>

Addition Practice

Add, and write the sums on a folded paper.

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
(A)	23 <u>6</u>	21 <u>4</u>	23 <u>1</u>	22 <u>3</u>	20 <u>0</u>	24 <u>4</u>	21 <u>9</u>	24 <u>7</u>	22 <u>8</u>	20 <u>5</u>
(B)	20 <u>6</u>	23 <u>7</u>	21 <u>5</u>	23 <u>2</u>	22 <u>4</u>	20 <u>1</u>	24 <u>5</u>	21 <u>0</u>	24 <u>8</u>	22 <u>9</u>
(C)	22 <u>0</u>	20 <u>7</u>	23 <u>8</u>	21 <u>6</u>	23 <u>5</u>	22 <u>5</u>	20 <u>2</u>	24 <u>6</u>	21 <u>1</u>	24 <u>9</u>

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
(D)	24 <u> 3 </u>	22 <u> 1 </u>	20 <u> 8 </u>	23 <u> 9 </u>	21 <u> 7 </u>	23 <u> 4 </u>	22 <u> 6 </u>	20 <u> 3 </u>	24 <u> 0 </u>	21 <u> 2 </u>
(E)	21 <u> 3 </u>	23 <u> 0 </u>	22 <u> 2 </u>	20 <u> 9 </u>	24 <u> 2 </u>	21 <u> 8 </u>	23 <u> 3 </u>	22 <u> 7 </u>	20 <u> 4 </u>	24 <u> 1 </u>

Getting Ready to Borrow from the Tens and Hundreds

1. How many cents are there in 1 dime?
2. How many cents are there in 1 dollar?

Think the right answers for these:

3. $\$8 - \$1 = \underline{\quad}?\underline{\quad}$
4. $\$5 - \$1 = \underline{\quad}?\underline{\quad}$
5. $\$2 - \$1 = \underline{\quad}?\underline{\quad}$
6. $\$1 - \$1 = \underline{\quad}?\underline{\quad}$
7. $\$9 - \$1 = \underline{\quad}?\underline{\quad}$
8. $\$3 - \$1 = \underline{\quad}?\underline{\quad}$
9. $\$7 - \$1 = \underline{\quad}?\underline{\quad}$
10. $\$6 - \$1 = \underline{\quad}?\underline{\quad}$
11. $\$4 - \$1 = \underline{\quad}?\underline{\quad}$
12. $\$1 + 3 \text{ dimes} = \underline{\quad}?\underline{\quad} \text{ dimes.}$
13. $\$1 + 7 \text{ dimes} = \underline{\quad}?\underline{\quad} \text{ dimes.}$
14. $\$1 + 5 \text{ dimes} = \underline{\quad}?\underline{\quad} \text{ dimes.}$
15. $\$1 + 2 \text{ dimes} = \underline{\quad}?\underline{\quad} \text{ dimes.}$
16. $\$1 + 1 \text{ dime} = \underline{\quad}?\underline{\quad} \text{ dimes.}$
17. $\$1 + 8 \text{ dimes} = \underline{\quad}?\underline{\quad} \text{ dimes.}$
18. $\$1 + 6 \text{ dimes} = \underline{\quad}?\underline{\quad} \text{ dimes.}$
19. $\$1 + 0 \text{ dimes} = \underline{\quad}?\underline{\quad} \text{ dimes.}$
20. $\$1 + 4 \text{ dimes} = \underline{\quad}?\underline{\quad} \text{ dimes.}$
21. $2 \text{ dimes} - 1 \text{ dime} = \underline{\quad}?\underline{\quad} \text{ dime.}$
22. $4 \text{ dimes} - 1 \text{ dime} = \underline{\quad}?\underline{\quad} \text{ dimes.}$
23. $7 \text{ dimes} - 1 \text{ dime} = \underline{\quad}?\underline{\quad} \text{ dimes.}$
24. $1 \text{ dime} - 1 \text{ dime} = \underline{\quad}?\underline{\quad} \text{ dimes.}$
25. $8 \text{ dimes} - 1 \text{ dime} = \underline{\quad}?\underline{\quad} \text{ dimes.}$
26. $6 \text{ dimes} - 1 \text{ dime} = \underline{\quad}?\underline{\quad} \text{ dimes.}$
27. $3 \text{ dimes} - 1 \text{ dime} = \underline{\quad}?\underline{\quad} \text{ dimes.}$
28. $5 \text{ dimes} - 1 \text{ dime} = \underline{\quad}?\underline{\quad} \text{ dimes.}$
29. $9 \text{ dimes} - 1 \text{ dime} = \underline{\quad}?\underline{\quad} \text{ dimes.}$
30. $1 \text{ dime} + 3 \text{ cents} = \underline{\quad}?\underline{\quad} \text{ cents.}$

31. 1 dime + 1 cent = $_\?_\$ cents.
32. 1 dime + 5 cents = $_\?_\$ cents.
33. 1 dime + 0 cents = $_\?_\$ cents.
34. 1 dime + 4 cents = $_\?_\$ cents.
35. 1 dime + 2 cents = $_\?_\$ cents.
36. 1 dime + 7 cents = $_\?_\$ cents.
37. 1 dime + 6 cents = $_\?_\$ cents.
38. 1 dime + 8 cents = $_\?_\$ cents.
39. \$3.42 = 3 dollars, 4 dimes, and 2 cents.
40. \$3.42 = 2 dollars, 14 dimes, and 2 cents.
41. \$3.42 = 2 dollars, 13 dimes, and 12 cents.
42. \$7.84 = 6 dollars, 17 dimes, and 14 cents.
43. \$2.31 = $_\?_\$ dollar, 12 dimes, and 11 cents.
44. \$4.38 = $_\?_\$ dollars, 12 dimes, and 18 cents.
45. \$8.13 = $_\?_\$ dollars, 10 dimes, and 13 cents.
46. \$6.04 = $_\?_\$ dollars, 9 dimes, and 14 cents.
47. \$5.70 = $_\?_\$ dollars, 16 dimes, and 10 cents.
48. \$8.00 = $_\?_\$ dollars, 9 dimes, and 10 cents.
49. \$4.28 = 3 dollars, $_\?_\$ dimes, and 18 cents.
50. \$7.56 = 6 dollars, $_\?_\$ dimes, and 16 cents.
51. \$2.83 = 1 dollar, $_\?_\$ dimes, and 13 cents.
52. \$8.10 = 7 dollars, $_\?_\$ dimes, and 10 cents.
53. \$3.04 = 2 dollars, $_\?_\$ dimes, and 14 cents.
54. \$2.00 = 1 dollar, $_\?_\$ dimes, and 10 cents.
55. \$5.47 = 4 dollars, 13 dimes, and $_\?_\$ cents.
56. \$2.16 = 1 dollar, 10 dimes, and $_\?_\$ cents.
57. \$3.58 = 2 dollars, 14 dimes, and $_\?_\$ cents.
58. \$7.20 = 6 dollars, 11 dimes, and $_\?_\$ cents.
59. \$4.02 = 3 dollars, 9 dimes, and $_\?_\$ cents.
60. \$3.00 = 2 dollars, 9 dimes, and $_\?_\$ cents.
61. \$6.32 = 5 dollars, 12 dimes, and $_\?_\$ cents.
62. \$8.41 = 7 dollars, 13 dimes, and $_\?_\$ cents.

Borrowing from the Tens and Hundreds

Subtract \$3.89 from \$6.42.

Write \$3.89 under \$6.42, with the decimal points in a column.

We cannot take 9 from 2; so think of 6 dollars, 4 dimes, and 2 cents as 6 dollars, 3 dimes, and 12 cents. We say, you remember, "Borrow 1." That is, we take 1 dime from the 4 dimes, leaving 3 dimes, and add 10 cents to the 2 cents, giving 12 cents. Now think, "9 cents from 12 cents are 3 cents." Write 3 in the cents' column.

We cannot take 8 dimes from the 3 dimes that are left; so think of 6 dollars and 3 dimes as 5 dollars and 13 dimes. We say again, "Borrow 1." That is, we take 1 dollar from the 6 dollars, leaving 5 dollars, and add 10 dimes to the 3 dimes that were left before, giving 13 dimes. Then think, "8 dimes from 13 dimes are 5 dimes." Write 5 in the dimes' column.

Now think, "3 dollars from 5 dollars are 2 dollars." Write 2 in the dollars' column.

Then, \$3.89 from \$6.42 are \$2.53.

There are 734 pupils in the Madison School and 578 pupils in the Jefferson School. How many more pupils are there in the Madison School than in the Jefferson School?

$$734 \quad 8 \text{ from } 14 = ?$$

$$578 \quad 7 \text{ from } 12 = ?$$

$$\text{---} \quad 5 \text{ from } 6 = ?$$

734 = 7 hundreds, 3 tens, and 4 ones; or

734 = 6 hundreds, 13 tens, and 4 ones; or

734 = 6 hundreds, 12 tens, and 14 ones.

734 = 6 hundreds, 12 tens, and 14 ones = $600 + 120 + 14$

578 = 5 hundreds, 7 tens, and 8 ones = $500 + 70 + 8$

156 = 1 hundred, 5 tens, and 6 ones = $100 + 50 + 6$

In subtracting 578 from 734, first write 578 under 734, with the ones under the ones, tens under the tens, and hundreds under the hundreds.

We cannot take 8 ones from 4 ones; so think of 7 hundreds, 3 tens, and 4 ones as 7 hundreds, 2 tens, and 14 ones. We say, "Borrow 1." That is, we take 1 ten from the 3 tens, leaving 2 tens, and add 10 ones to the 4 ones, giving 14 ones. Then think, "8 from 14 are 6."

Write 6 in the ones' column.

We cannot take 7 tens from 2 tens; so think of 7 hundreds and 2 tens as 6 hundreds and 12 tens. We say, "Borrow 1." That is, we take 1 hundred from the 7 hundreds, leaving 6 hundreds, and add 10 tens to the 2 tens that were left before, giving 12 tens. Then think, "7 from 12 are 5." Write 5 in the tens' column.

Think, "5 from 6 is 1." Write 1 in the hundreds' column.

Then, there are 156 more pupils in the Madison School than in the Jefferson School.

Different Kinds of Borrowing

There are some kinds of examples in subtraction that may give you trouble if you are not careful. They

are worked like those that have just been explained to you, but you need to be on the lookout for some of these trouble-makers. Here are some of these examples already worked, to show you how they should be done. Study them and have your teacher help you on any that cause you trouble.

408" Think, "3 from 8 are 5." Write 5.

243 Think, "4 from 10 are 6." Write 6.

165 Think, "2 from 3 is 1." Write 1.

712 Think, "7 from 12 are 5." Write 5.

437 Think, "3 from 10 are 7." Write 7.

275 Think, "4 from 6 are 2." Write 2.

901 Think, "6 from 11 are 5." Write 5.

476 Think, "7 from 9 are 2." Write 2.

425 Think, "4 from 8 are 4." Write 4.

\$8.00 Think, "5 from 10 are 5." Write 5.

3.75 Think, "7 from 9 are 2." Write 2.

\$4.25 Think, "3 from 7 are 4." Write 4.

Put the dollar sign (\$) and the decimal point (.) where they belong.

700 Think, "9 from 10 is 1." Write 1.

299 Think, "9 from 9 is 0." Write 0.

401 Think, "2 from 6 are 4." Write 4.

431 Think, "4 from 11 are 7." Write 7.

54 Think, "5 from 12 are 7." Write 7.

377 Think, "Nothing from 3 are 3." Write 3.

900	Think, "1 from 10 are 9."	Write 9.
401	Think, "0 from 9 are 9."	Write 9.
<u>499</u>	Think, "4 from 8 are 4."	Write 4.
205	Think, "6 from 15 are 9."	Write 9.
176	Think, "7 from 9 are 2."	Write 2.
<u>29</u>	Think, "1 from 1 is 0."	Do not write anything.
401	Think, "8 from 11 are 3."	Write 3.
398	Think, "9 from 9 is 0."	Do not write anything.
<u>3</u>	Think, "3 from 3 is 0."	Do not write anything.

Problems

1. It is 812 miles from the town in which Frank lives to Boston. On a trip there, in their new car, the family drove 289 miles the first day. How many miles farther had they to go?

2. William's father owns 403 sheep and 297 goats. How many more sheep has he than goats?

3. Tom's father weighs 178 pounds, and Tom's uncle weighs 210 pounds. Which is heavier? How much heavier?

4. Anne has a pretty brown hen, and Alice has a pure white hen. "I believe my brown hen has laid more eggs this year than your white one has," said Anne. "I am not so sure," said Alice. "I heard Mother say that my white hen has laid 202 eggs so far this year." "Well," Anne said, "that is more than mine has laid. My brown hen has laid only 179 eggs." How many more eggs did the white hen lay?

148 Subtraction and Addition Practice

Subtraction Practice

Subtract, and write the differences on a folded paper.
Prove.

	1.	2.	3.	4.	5.	6.
(A)	989 <u>681</u>	\$506 <u>354</u>	580 <u>443</u>	895 <u>791</u>	\$3.83 <u>2.93</u>	720 <u>365</u>
(B)	960 <u>451</u>	738 <u>711</u>	\$811 <u>548</u>	791 <u>453</u>	914 <u>711</u>	\$979 <u>482</u>
(C)	841 <u>365</u>	\$6.70 <u>4.52</u>	897 <u>681</u>	802 <u>587</u>	972 <u>563</u>	876 <u>392</u>
(D)	457 <u>282</u>	568 <u>292</u>	\$4.81 <u>4.52</u>	726 <u>611</u>	900 <u>478</u>	765 <u>572</u>
(E)	600 <u>499</u>	\$431 <u>354</u>	532 <u>364</u>	\$9.43 <u>3.54</u>	650 <u>354</u>	\$3.04 <u>2.99</u>

Addition Practice

Add, beginning with the two-figure numbers. Write the sums on a strip of paper. In the first example, think, "29 and 6 are 35, and 7 are 42." Write 42. Do the others in the same way.

1.	2.	3.	4.	5.	6.	7.	8.	9.
			26					
	27		8					
	4	31	1			28		26
29	7	0	4	28	29	5	29	9
6	1	6	0	6	5	6	4	0
7	8	5	9	8	6	1	7	8

Problems

1. The Woolworth Building in New York City is 792 feet high, and the Washington Monument in Washington is 555 feet high. How much higher is the Woolworth Building than the Washington Monument?



2. Helen is 9 years old. Her sister Grace is 23 years old. How much older is Grace than Helen?

3. Harry and Tom were playing a game. At the end of the game Harry's score was 75 points and Tom's was 18 points higher. What was Tom's score?

4. Jack is 8 years old now. His father told him that he would buy him a bicycle when he was 12 years old. How many years will Jack have to wait for his bicycle?

5. Marion's sister Doris is 21 years old. Marion is 10 years younger than Doris. How old is Marion?

6. There are 45 children in the third grade. One day there were only 39 children present. How many children were absent?

7. Alice had \$7.25 in her bank and put in \$1.45 more. How much money did she have in her bank then?

8. Ruth's mother made a flower garden. She planted 48 bulbs, but only 37 of them grew. How many bulbs died?

9. Robert weighs 91 pounds, and Jim weighs 75 pounds. How much lighter is Jim than Robert?

Subtraction Practice

Subtract, and write the differences on a folded paper.

	1.	2.	3.	4.	5.	6.
(A)	7 2 <hr/>	438 14 <hr/>	95 75 <hr/>	879 751 <hr/>	609 2 <hr/>	491 452 <hr/>
(B)	623 485 <hr/>	11 5 <hr/>	101 6 <hr/>	78 49 <hr/>	790 131 <hr/>	195 7 <hr/>
(C)	504 6 <hr/>	878 842 <hr/>	28 6 <hr/>	376 28 <hr/>	72 63 <hr/>	674 280 <hr/>

The Calendar — Last Month, Next Month

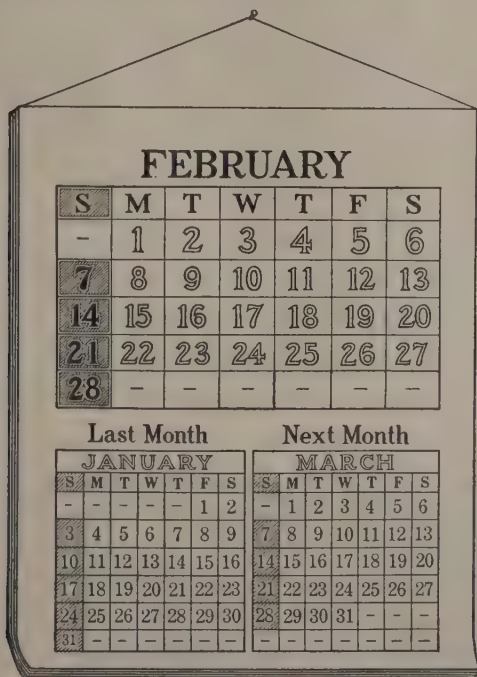
1. Do you know the names of the first three months of the year? They are January, February, and March.

2. What is the name of the month before February?

3. What is the name of the month after February?

4. How many days are there in the month of February shown here?

5. How many days are there in the month of March shown here?



6. How many days are there in the month of January shown here?

7. How many days are there in all three months together?

8. How many more days does the month of January have than the month of March?

9. How many more days does the month of March have than the month of February?

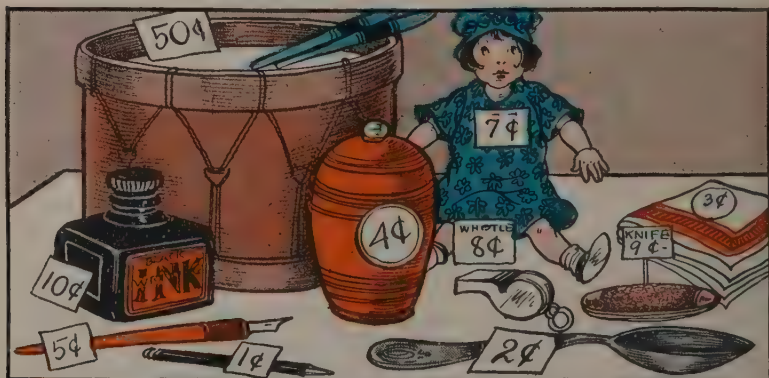
Addition Practice

Add, beginning with the two-figure numbers. Write the sums on a strip of paper. In the first example, think, "27 and 0 are 27, and 9 are 36, and 7 are 43." Write 43. Do the others in the same way.

1.	2.	3.	4.	5.	6.	7.	8.	9.
					25			
					1	25	28	
27		28		30	6	4	0	26
0	31	3	29	3	3	0	9	1
9	4	8	2	5	2	7	0	5
<u>7</u>	<u>9</u>	<u>4</u>	<u>9</u>	<u>2</u>	<u>7</u>	<u>5</u>	<u>9</u>	<u>8</u>

A Visit to a Store

John and his mother went to the store to do some shopping. Several of the articles they bought are shown below.



Find how much the following groups of things cost:

1. How much did the knife and the pen cost?
2. How much did the whistle and the drum cost?

3. If John needed a new pencil and a bottle of ink for his school work, how much money would he need to have in order to buy both pencil and ink?

4. How much did the doll and the handkerchief cost?

5. How much did the knife and the spoon cost?

6. How much did the bottle of ink and the jar cost?

7. How much did the knife and the handkerchief cost?

8. How much did the knife and the doll cost?

9. How much did the whistle and the doll cost?

10. How much did the drum and the doll cost?

Addition Practice

Add, beginning with the two-figure numbers. Write the sums on a strip of paper. In the first example, think, "27 and 6 are 33, and 9 are 42." Write 42. Do the others in the same way.

1.	2.	3.	4.	5.	6.	7.	8.	9.
	25							
	5		30		26	26		25
27	0	33	1	27	4	2	27	7
6	8	2	5	7	2	1	8	1
<u>9</u>	<u>6</u>	<u>5</u>	<u>6</u>	<u>9</u>	<u>9</u>	<u>8</u>	<u>6</u>	<u>8</u>

Subtraction Practice

Subtract, and write the differences on a folded paper.

	1.	2.	3.	4.	5.	6.
(A)	9	27	106	424	185	953
	<u>6</u>	<u>3</u>	<u>99</u>	<u>338</u>	<u>96</u>	<u>74</u>
(B)	223	169	203	105	856	858
	<u>216</u>	<u>79</u>	<u>197</u>	<u>79</u>	<u>93</u>	<u>780</u>

General Practice 5

Write the answers on a sheet of paper. Time allowed: 4 minutes.

1.	2.	3.
The sum of 0 and 2 is	$6 - 4 =$	$7 + 1 =$
4.	5.	6.
11 minus 5 =	4 and 1 are	8 plus 2 are
7.	8.	9.
2 from 11 are	3 and $_?$ = 6	9 and 2 are
10.	11.	12.
Subtract: 7 7 —	Add: 3 7 —	12 less 3 are

Review

On page 155 is a review of what you have been studying. Write the numbers 1 to 23 on a sheet of paper. After each number you have written, write the answer to the question that has the same number.

At the end of each question you will see a page number. If you missed any part of the test, turn back to the page number given after that part of the test, where you will find how to answer what you missed. Study what you missed until you are sure you know what to do. Then go back to the review and again try the part you missed. Do this until you do not miss anything or until your teacher tells you to work on something else.

1. What are coins? (Page 81)
2. What is the value of a dime? (Page 83)
3. What is the value of a nickel? (Page 82)
4. How many dimes are there in 40¢? (Page 135)
5. How many dimes are there in 50¢? (Page 135)
6. What does the sign ¢ mean? (Page 82)
7. What does the sign \$ mean? (Page 135)
8. Write \$4.75, using words. (Page 135)
9. What do we call the point between the 4 and 7 in \$4.75? (Page 135)
10. Write eleven dollars and sixty cents, using figures and signs. (Page 135)
11. What is the name of the first month in the year? (Page 150)
12. What is the name of the second month in the year? (Page 150)
13. What is the name of the third month in the year? (Page 150)
14. What does "sum" mean? (Page 19)
15. What does "difference" mean? (Page 41)
16. What does "add" mean? (Page 19)
17. What does "subtract" mean? (Page 41)
18. What does the sign + mean? (Page 27)
19. What does the sign - mean? (Page 51)
20. What does the sign = mean? (Page 27)
21. How do you write six thousand, four hundred forty, using figures? (Page 104)
22. How do you write five dollars and sixty cents, using figures and signs? (Page 135)
23. How do you write \$9.81, using words? (Page 135)

PART TWO

CHAPTER VIII

LEARNING TO MULTIPLY AND DIVIDE



George: How much are these pencils, Mr. Brown?

Mr. Brown: They are five cents each, George.

George: Well, I believe I'll take four of them. Let's see how much that will be. Five cents and five cents are ten cents, and five cents are fifteen cents, and five cents are twenty cents. Oh, yes, it will be twenty cents.

Mr. Brown: Yes, the amount will be twenty cents. But did you have to add to find out?

George: Yes, Mr. Brown. I don't know any other way.

Mr. Brown: Well, when you get a little farther along in school, you will learn that four fives are twenty

and other facts like that, and you will not have to add to find answers like this.

George: That will be fine. I see now that four fives are twenty. It is because four fives added give twenty.

Mr. Brown: That is right, George. You are a bright boy. Do you think you can work out some other facts like this by yourself and learn them? If you will learn how to find the cost of seven pencils, or three pencils, or nine pencils, or two pencils, or any number of pencils, and learn the cost of some other things at two cents each, three cents each, four cents each, and so on, you may come in and help me run my store during your spare time.

George: Thank you, Mr. Brown. I'll learn these just as fast as I can. Good-by, Mr. Brown.

Mr. Brown: Good-by, George.

Using 5 in Multiplying and Dividing

1. Count by 5's from 5 to 45, saying, "5, 10, 15," and so on.

2. Put a strip of paper under these columns, add, and write the sums on the paper.

						5	
						5	5
				5		5	5
				5	5	5	5
			5	5	5	5	5
	5		5	5	5	5	5
	5	5	5	5	5	5	5
5	5	5	5	5	5	5	5
5	5	5	5	5	5	5	5

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3. How many are 5 and 5?
4. How many are two 5's?
5. How many 5's are there in 10?
6. How many are $5 + 5 + 5 + 5$?
7. How many are four 5's?
8. How many 5's are there in 20?
9. Tom bought 3 pencils at 5¢ each. How much did they cost in all?
10. Three 5's are how many?
11. A pencil costs 5¢. How many pencils can Edward get for 15¢?
12. How many 5's are there in 15?
13. I have 5 nickels in my hand. How many cents are these equal to all together?
14. Five 5's are how many?
15. How many 5's are there in 25?
16. I have 7 nickels in my hand. How many cents are these equal to all together?
17. Seven 5's are how many?
18. How many 5's are there in 35?
19. A candy bar costs 5¢. How much will 6 candy bars cost?
20. Six 5's are how many?
21. If a candy bar costs 5¢, how many candy bars can you get for 30¢?
22. How many 5's are there in 30?
23. Nine little girls were playing on Mary's lawn. Mary's mother thought it would be nice to surprise them by getting each one of them an ice cream cone. If one ice cream cone cost 5¢, what did 9 ice cream cones cost in all?
24. Nine 5's are how many?

25. How many ice cream cones at 5¢ each can you get for 45¢?

26. A pencil costs 5¢. How much will 8 pencils cost in all?

27. At 5¢ each, how many pencils can you get for 40¢?

28. Think the right answers for these:

- | | |
|---------------------------|-----------------------------|
| (A) Two 5's are ___?___ | There are ___?___ 5's in 10 |
| (B) Four 5's are ___?___ | There are ___?___ 5's in 20 |
| (C) Three 5's are ___?___ | There are ___?___ 5's in 15 |
| (D) Five 5's are ___?___ | There are ___?___ 5's in 25 |
| (E) Seven 5's are ___?___ | There are ___?___ 5's in 35 |
| (F) Six 5's are ___?___ | There are ___?___ 5's in 30 |
| (G) Nine 5's are ___?___ | There are ___?___ 5's in 45 |
| (H) Eight 5's are ___?___ | There are ___?___ 5's in 40 |

Addition Practice

Add, beginning with the two-figure numbers. Write the sums on a strip of paper. In the first example, think, "25 and 6 are 31, and 3 are 34, and 2 are 36, and 4 are 40." Write 40. Do the others in the same way.

1.	2.	3.	4.	5.	6.	7.	8.	9.
	26			26				
25	0			5	32	25	28	26
6	3	31	32	2	0	9	7	7
3	1	1	2	4	4	0	1	1
2	7	5	5	2	3	4	2	3
4	4	6	3	7	6	3	9	3

New Words and Sign

1. What does the sign $+$ mean?

2. What does the sign $-$ mean?

3. What does the sign $=$ mean?

4. George spent 5¢ for a pencil at the drug store, 5¢ for an ice cream cone at the ice cream stand, and 5¢ for a small bunch of flowers at the flower shop. How many different times did George spend 5¢? Do you see that George spent 5¢ three times? Five cents spent 3 times is how many cents spent in all? If we add 5, 5, and 5, we get 15, and we may say, "Three 5's are 15"; or, saying the same thing in another way, "5 taken 3 times are 15"; or "3 times 5 are 15."

5. Write four 5's in a column and add them. How many 5's did you write? 5 taken 4 times are how many? If we add 5, 5, 5, and 5, we get 20, and we may say, "Four 5's are 20"; or, saying the same thing in another way, "5 taken 4 times are 20"; or "4 times 5 are 20."

6. Here is a new sign that you may use in statements like "4 times 5 are 20." It is called the **times** sign and is made like this: \times . You may use the sign \times in place of the word "times," and as you have already learned, you may use the sign $=$ in place of the word "are."

4 times 5 are 20

$$4 \times 5 = 20$$

The two statements above mean exactly the same thing. Do you see now why the sign \times is called the

“times” sign? From now on you will use this new sign a great deal. Do not get it mixed up with any of the other signs you know.

7. Write the following, using signs:

- | | |
|----------------------|------------------|
| (A) 4 times 5 are 20 | 7 times 5 are 35 |
| (B) 2 times 5 are 10 | 9 times 5 are 45 |
| (C) 3 times 5 are 15 | 6 times 5 are 30 |
| (D) 5 times 5 are 25 | 8 times 5 are 40 |

8. When we say $4 \times 5 = 20$, we **multiply** 5 by 4.

9. When we say $3 \times 5 = 15$, we **multiply** 5 by 3.

10. When we say $9 \times 5 = 45$, we **multiply** 5 by 9.

11. An example like “ $2 \times 5 = 10$ ” is called a **multiplication** example. You remember, an example like “ $5 + 2 = 7$ ” is an **addition** example and an example like “ $9 - 3 = 6$ ” is a **subtraction** example.

When you see the sign $+$, add.

When you see the sign $-$, subtract.

When you see the sign \times , multiply.

12. Now that you know the word “multiply,” you may also read the sign \times “multiplied by.” $5 \times 4 = 20$ may be read, “5 multiplied by 4 are 20.” Remember, $4 \times 5 = 20$ may be read, “4 times 5 are 20.” It means that four 5’s are 20. Also, $4 \times 5 = 20$ may be read, “4 multiplied by 5 equals 20.” It means that five 4’s are 20.

13. The name of the answer in a multiplication example is the **product**. In $5 \times 4 = 20$, **20** is the **product**. In $5 \times 7 = 35$, **35** is the **product**.

Practice with Arithmetic Signs

Think the right answers for these:

	1.	2.	3.	4.
(A)	$5 \times 3 = _?$	$9 + 2 = _?$	$18 - 9 = _?$	$5 \times 9 = _?$
(B)	$9 + 9 = _?$	$5 \times 2 = _?$	$9 + 3 = _?$	$9 + 5 = _?$
(C)	$16 - 9 = _?$	$9 + 8 = _?$	$5 \times 4 = _?$	$9 + 1 = _?$
(D)	$5 \times 6 = _?$	$16 - 8 = _?$	$9 + 7 = _?$	$17 - 9 = _?$
(E)	$9 + 4 = _?$	$5 \times 7 = _?$	$16 - 7 = _?$	$5 \times 5 = _?$
(F)	$17 - 8 = _?$	$9 + 0 = _?$	$5 \times 8 = _?$	$9 \times 6 = _?$

General Practice 6

Write the answers on a sheet of paper. Time allowed: 4 minutes.

1.	2.	3.	4.
Add: 5 7 <hr/>	6 from 15 =	1 and 6 are	The sum of 9 and 3 is
5.	6.	7.	8.
5 less 1 =	8 minus 2 =	$8 + 3 =$	Subtract: 1 0 <hr/>
9.	10.	11.	12.
6 and $_?$ are 13	Add: 3 2 3 <hr/>	1 from 10 =	0 and 3 are

Problems



1. Mary sold 3 bunches of daisies at 5 cents for each bunch. How many cents did Mary get for her daisies?

Think, "Three 5's are ___?___."

2. A lead pencil costs 5 cents. Four lead pencils like that will cost how many cents? Two lead pencils? Five lead pencils? Three lead pencils?

Think, "Four 5's are ___?___," and so on.

3. You can get an ice cream cone for 5¢. How many ice cream cones can you get for 20¢? For 40¢? For 15¢? For 25¢? For 10¢?

4. You remember one nickel equals 5 cents. Two nickels equal how many cents? Four nickels? Three nickels? Five nickels? Seven nickels? Six nickels? Nine nickels? Eight nickels?

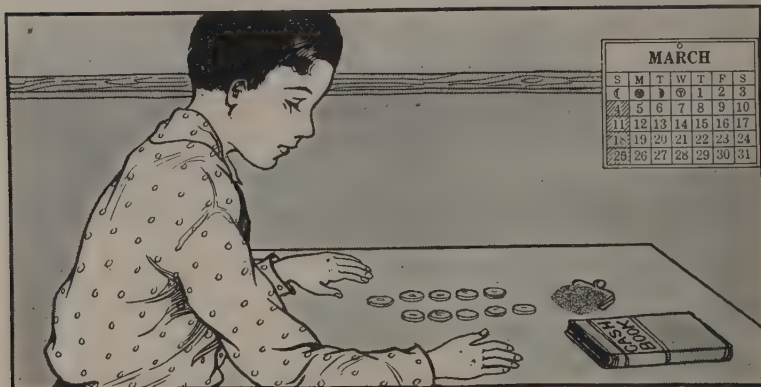
5. If you can get an orange for 5¢, how many oranges like it can you get for 10¢? For 20¢? For 30¢? For 15¢? For 25¢? For 45¢? For 40¢? For 35¢?

6. A small red top costs 5¢. George has 15¢. How many of the small red tops can he get with his money?

7. William set out 4 rows of pear trees with 5 trees in each row. How many pear trees did William set out?

8. One apple costs 5 cents. What will 3 apples like it cost? Two apples? Four apples? Seven apples?

Learning More about Using 5 in Multiplying



1. Put 10 cents in play money on your desk like this:

Row A



Row B



2. How many cents are there in row A?

3. How many cents are there in row B?

4. 5 cents and 5 cents are how many cents?
5. 5 and 5 are how many?
6. Two 5's are how many?
7. 5 taken 2 times are how many?
8. 5 multiplied by 2 are how many?
9. $5 \times 2 = ?$
10. Now arrange the 10 cents as shown here.

Row A



Row B



Row C



Row D



Row E



11. How many cents are there in row A? In row B? In row C? In row D? In row E?

12. 2 cents plus 2 cents plus 2 cents plus 2 cents are how many cents?

$$13. 2 + 2 + 2 + 2 + 2 = ?$$

14. Five 2's are how many?

15. 2 taken 5 times are how many?

16. 2 multiplied by 5 are how many?
17. $2 \times 5 = ?$
18. How many are 5×2 ?

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19. How many are 2×5 ?
20. Do you see that two 5's are the same as five 2's?
21. Do you see that $5 \times 2 = 2 \times 5$?
22. What else equals 5×3 ? 5×8 ? 5×4 ? 5×2 ?
 5×6 ? 5×9 ? 5×7 ?

Multiplication and Division Practice

Think the right products for these:

	1.	2.	3.	4.
(A)	$5 \times 2 = _? _$	$5 \times 5 = _? _$	$7 \times 5 = _? _$	$3 \times 5 = _? _$
(B)	$4 \times 5 = _? _$	$2 \times 5 = _? _$	$5 \times 6 = _? _$	$8 \times 5 = _? _$
(C)	$5 \times 7 = _? _$	$5 \times 8 = _? _$	$5 \times 3 = _? _$	$5 \times 9 = _? _$

Think the right answers for these:

	1.	2.
(D)	Five 2's are $_? _$	There are $_? _$ 2's in 10
(E)	Five 5's are $_? _$	There are $_? _$ 5's in 25
(F)	Five 3's are $_? _$	There are $_? _$ 3's in 15
(G)	Five 9's are $_? _$	There are $_? _$ 9's in 45
(H)	Five 7's are $_? _$	There are $_? _$ 7's in 35
(I)	Five 4's are $_? _$	There are $_? _$ 4's in 20
(J)	Five 6's are $_? _$	There are $_? _$ 6's in 30
(K)	Five 8's are $_? _$	There are $_? _$ 8's in 40
(L)	There are $_? _$ 5's in 10	Three 5's are $_? _$
(M)	Five 3's are $_? _$	There are $_? _$ 2's in 10
(N)	There are $_? _$ 5's in 15	Four 5's are $_? _$
(O)	Five 2's are $_? _$	Two 5's are $_? _$
(P)	There are $_? _$ 4's in 20	There are $_? _$ 3's in 15
(Q)	Five 6's are $_? _$	Five 5's are $_? _$
(R)	There are $_? _$ 5's in 30	There are $_? _$ 6's in 30
(S)	Five 4's are $_? _$	There are $_? _$ 5's in 20
(T)	There are $_? _$ 7's in 35	Six 5's are $_? _$

	1.	2.
(U)	There are <u> ?</u> 5's in 25	Five 7's are <u> ?</u>
(V)	Seven 5's are <u> ?</u>	There are <u> ?</u> 5's in 35
(W)	Five 8's are <u> ?</u>	Eight 5's are <u> ?</u>
(X)	There are <u> ?</u> 5's in 40	Five 9's are <u> ?</u>
(Y)	Nine 5's are <u> ?</u>	There are <u> ?</u> 8's in 40
(Z)	There are <u> ?</u> 9's in 45	There are <u> ?</u> 5's in 45

Subtraction Practice

Subtract, and write the differences on a folded paper.

	1.	2.	3.	4.	5.	6.
(A)	12 <u> 6 </u>	695 <u> 30 </u>	92 <u> 84 </u>	121 <u> 90 </u>	602 <u> 170 </u>	301 <u> 4 </u>
(B)	411 <u> 57 </u>	47 <u> 20 </u>	762 <u> 37 </u>	598 <u> 1 </u>	100 <u> 29 </u>	710 <u> 586 </u>
(C)	812 <u> 727 </u>	949 <u> 430 </u>	74 <u> 15 </u>	236 <u> 80 </u>	843 <u> 9 </u>	131 <u> 89 </u>

General Practice 7

Write the answers on a sheet of paper. Time allowed: 4 minutes.

1.	2.	3.	4.
6 minus 2 =	2 plus 3 =	9 - 9 =	6 + 0 =
5.	6.	7.	8.
4 and 2 are	2 from 7 =	7 plus 3 =	9 and <u> ?</u> are 12

9.	10.	11.	12.
13 minus 8 =	The sum of 9 and 4 is	7 and 4 are	9 less 6 =

Problems



1. Frank set out 3 rows of grapevines, putting 5 vines in each row. How many grapevines did Frank set out?
2. George's brother earns 5 dollars a week. How much does he earn in 4 weeks? In 7 weeks?
3. Grace had 25 pieces of candy. She gave all the candy to 5 of her friends, giving each the same number of pieces. How many pieces did each get?
4. Henry puts 2 nickels in his bank each week. How many cents does Henry save each week?
5. There are 2 horses in a team of horses. John's father has 5 teams of horses. How many horses has John's father in all?
6. One of Mary's dolls cost 5 cents, and another larger doll cost 5 times as much. How much did the larger doll cost?

Addition Practice

Add, and write the sums on a strip of paper.

1.	2.	3.	4.	5.	6.	7.	8.	9.
2	4	0	6	3	1	4	0	3
0	1	3	1	1	7	2	0	5
9	7	6	2	6	9	5	9	6
6	4	5	7	2	0	4	2	2
3	5	6	9	7	8	9	7	7
5	2	0	0	6	1	2	0	0

Using 2 in Multiplying and Dividing



1. Count by 2's from 2 to 18, saying, "2, 4, 6," and so on.

2. How much will 3 two-cent stamps cost? Seven two-cent stamps? Two two-cent stamps? Nine two-cent stamps? Four two-cent stamps? Eight two-cent stamps? Six two-cent stamps?

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3. How many two-cent stamps can you get for 4¢?
For 10¢? For 18¢? For 6¢? For 14¢? For 8¢? For
12¢? For 16¢?

4. Put 6 toothpicks or short sticks on your desk
like this:

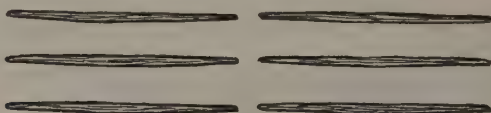


5. Three 2's are how many?

6. $2 \times 3 = \underline{\quad}?$

7. How many 2's are there in 6?

8. Now place the 6 toothpicks or sticks like this:



9. Two 3's are how many?

10. $3 \times 2 = \underline{\quad}?$

11. How many 3's are there in 6?

Multiplication and Division Practice

Think the right answers for these:

1.

2.

(A) Two 2's are $\underline{\quad}?$

Six 2's are $\underline{\quad}?$

(B) There are $\underline{\quad}?$ 2's in 6

$2 \times 2 = \underline{\quad}?$

(C) $2 \times 3 = \underline{\quad}?$

Two 3's are $\underline{\quad}?$

(D) There are $\underline{\quad}?$ 2's in 8

There are $\underline{\quad}?$ 3's in 6

(E) 3 times 2 are $\underline{\quad}?$

There are $\underline{\quad}?$ 4's in 8

(F) Four 2's are $\underline{\quad}?$

2 times 4 are $\underline{\quad}?$

(G) $4 \times 2 = \underline{\quad}?$

$2 \times 6 = \underline{\quad}?$

(H) There are $\underline{\quad}?$ 6's in 12

There are $\underline{\quad}?$ 2's in 12

1.

2.

- | | |
|---------------------------------|-----------------------------|
| (I) Seven 2's are ___?___ | Two 7's are ___?___ |
| (J) There are ___?___ 7's in 14 | 2 times 6 are ___?___ |
| (K) $2 \times 7 =$ ___?___ | There are ___?___ 2's in 16 |
| (L) Eight 2's are ___?___ | $2 \times 8 =$ ___?___ |
| (M) 7 times 2 are ___?___ | 2 times 0 are ___?___ |
| (N) Two 9's are ___?___ | Two 8's are ___?___ |
| (O) 8 times 2 are ___?___ | 2 times 8 are ___?___ |
| (P) There are ___?___ 2's in 18 | 9 times 2 are ___?___ |
| (Q) $9 \times 2 =$ ___?___ | There are ___?___ 9's in 18 |
| (R) Three 2's are ___?___ | 2 times 3 are ___?___ |
| (S) Two 4's are ___?___ | There are ___?___ 2's in 4 |
| (T) $3 \times 2 =$ ___?___ | $2 \times 4 =$ ___?___ |
| (U) Two 6's are ___?___ | 4 times 2 are ___?___ |
| (V) $6 \times 2 =$ ___?___ | $7 \times 2 =$ ___?___ |
| (W) There are ___?___ 2's in 14 | 6 times 2 are ___?___ |
| (X) 2 times 7 are ___?___ | There are ___?___ 8's in 16 |

Pints and Quarts

1. Fill a pint bottle with water. Pour the water into a quart bottle. Again fill the pint bottle. Pour the water into the quart bottle. How many pints make one quart?

A short way of writing "pint" or "pints" is pt.

A short way of writing "quart" or "quarts" is qt.



2 pints = 1 quart
2 pt. = 1 qt.

2. How many pints are there in 1 quart? In 4 quarts? In 2 quarts? In 7 quarts? In 3 quarts? In 6 quarts? In 9 quarts? In 8 quarts?

3. How many quarts are there in 2 pints? In 6 pints? In 4 pints? In 10 pints? In 8 pints? In 12 pints? In 14 pints? In 18 pints? In 16 pints?

4. Think the right answers for these:

- | | |
|--------------------------------|----------------------------|
| (A) 2 pints = $_\?_\$ quart | 10 pints = $_\?_\$ quarts |
| (B) 4 quarts = $_\?_\$ pints | 1 quart = $_\?_\$ pints |
| (C) 12 pints = $_\?_\$ quarts | 4 pints = $_\?_\$ quarts |
| (D) 2 quarts = $_\?_\$ pints | 3 quarts = $_\?_\$ pints |
| (E) 7 quarts = $_\?_\$ pints | 14 pints = $_\?_\$ quarts |
| (F) 6 pints = $_\?_\$ quarts | 8 pints = $_\?_\$ quarts |
| (G) 16 pints = $_\?_\$ quarts | 8 quarts = $_\?_\$ pints |
| (H) 5 quarts = $_\?_\$ pints | 6 quarts = $_\?_\$ pints |
| (I) 18 pints = $_\?_\$ quarts | 9 quarts = $_\?_\$ pints |

Problems

1. James can buy a pencil for 2 cents. How much would James have to pay for 3 pencils like it? Two pencils? Seven pencils? Four pencils? Eight pencils?

Think, "Three 2's are $_\?_\$, two 2's are $_\?_\$," and so on.

2. The street car on which Jane rides to school takes 2 hours to make a trip. How many trips will it make in 4 hours? In 8 hours? In 6 hours?

Think, "There are $_\?_\$ 2's in 4," and so on.

3. What would you have to pay for 2 bottles of ink at 5 cents each?

4. What will 3 pens cost at 2 cents each?

5. As you know, there are 2 pints in a quart. How many quarts are there in 18 pints?

6. How many rose bushes can be set out in 2 rows if there are 8 rose bushes in each row?

7. Two tops cost 10 cents. If each costs the same amount, how much does 1 top cost?

8. Twelve boys rode in two automobiles out to the river to swim. If the same number of boys were in each automobile, how many boys were there in each automobile?

General Practice 8

Write the answers on a sheet of paper. Time allowed: 4 minutes.

1.

2.

3.

4.

0 and ___?___ are 3	Seven 5's are	Add:	1 from 8 =
		3	
		<u>5</u>	

5.

6.

7.

8.

There are ___?___ 5's in 30	Add:	Nine 5's are	1 plus 5 =
	3		
	2		
	1		
	<u>2</u>		

9.

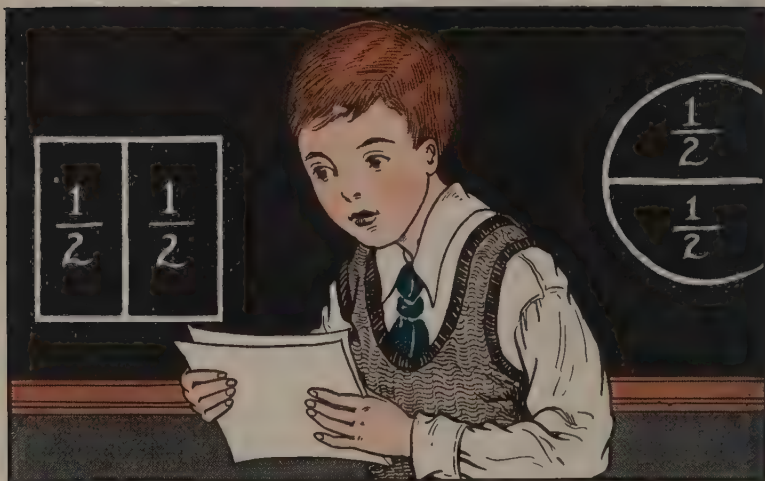
10.

11.

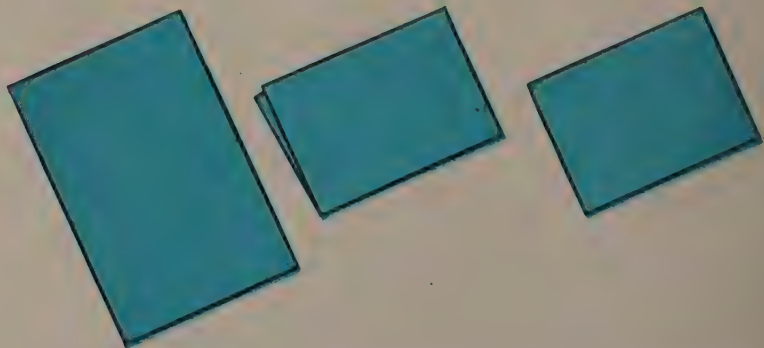
12.

Subtract:	There are	0 and 4 are	14 less 7 =
11	___?___ 5's in 25		
<u>3</u>			

Meaning of One-Half



1. Take a sheet of paper and fold it from bottom to top into two equal parts. Now cut or tear them apart.



2. One of these two equal parts is called **one-half**. One-half is printed in figures like this: $\frac{1}{2}$; and it is written like this: $\frac{1}{2}$. One-half means one of the two equal parts of something.

3. Now take another sheet of paper. Fold it from corner to corner into two equal parts. Cut or tear them apart. One of these parts is also called one-half.



4. Can you fold a sheet of paper any other way into two equal parts? Show it to your teacher if you can.

5. If an apple is cut into 2 equal parts, what is each one of the parts called?

6. If a pie is cut into 2 equal pieces, what is each one of them called?



7. One quart equals how many pints? One pint is what part of a quart?

One pint is one-half of a quart.

$$1 \text{ pint} = \frac{1}{2} \text{ quart}$$

8. How many halves are there in an orange? In a stick of candy? In a day? In an hour? In a dollar? In a piece of string? In a glass of water? In anything?



9. How many ducks are here?
What is one-half of four ducks?

10. What is one-half of four?
One-half of six? One-half of ten?
One-half of two? One-half of eight?

One-half of eighteen? One-half of fourteen? One-half of twelve? One-half of sixteen?

11. What is $\frac{1}{2}$ of 8? $\frac{1}{2}$ of 12? $\frac{1}{2}$ of 6? $\frac{1}{2}$ of 18? $\frac{1}{2}$ of 2?
 $\frac{1}{2}$ of 10? $\frac{1}{2}$ of 4? $\frac{1}{2}$ of 16? $\frac{1}{2}$ of 14?

Addition Practice

Add, beginning with the two-figure numbers. Write the sums on a strip of paper. In the first example, think: "25 and 8 are 33, and 0 are 33, and 3 are 36, and 8 are 44." Write 44. Do the others in the same way.

1.	2.	3.	4.	5.	6.	7.	8.	9.
25		25		27	25	29	27	
8	30	3		3	2	3	1	28
0	5	4	30	6	2	6	8	2
3	3	7	4	1	9	0	0	9
<u>8</u>	<u>4</u>	<u>2</u>	<u>7</u>	<u>8</u>	<u>5</u>	<u>8</u>	<u>9</u>	<u>5</u>

A New Sign

You have already learned that the sign $+$ means that you should add, the sign $-$ means that you should subtract, and the sign \times means that you should multiply. There is another sign and its meaning which you need to know. The sign is this: \div . When the sign \div is put between 12 and 2 like this: $12 \div 2$, it means that

you are to find out how many 2's there are in 12. In the same way, $6 \div 2$ means that you are to find out how many 2's there are in 6. How many 2's are there in 12? How many 2's are there in 6? Do you see that $12 \div 2 = 6$, and that $6 \div 2 = 3$? $12 \div 2 = 6$ is read, "12 divided by 2 equals 6," and $6 \div 2 = 3$ is read, "6 divided by 2 equals 3." When we say, " $6 \div 2 = 3$," we **divide** 6 by 2; when we say " $12 \div 2 = 6$," we **divide** 12 by 2. $12 \div 2 = 6$ and $6 \div 2 = 3$ are called **division** examples, and the sign \div is called the **sign of division**. If you look back in this chapter, you will see that you have already had some division examples, even though you did not use the sign of division. Find some of them.

When you see the sign \div between two numbers, divide.

General Practice 9

Write the answers on a sheet of paper. Time allowed: 4 minutes.

1.	2.	3.	4.
4 from 10 =	$2 + 4 =$	$4 - 3 =$	5 less 0 =
5.	6.	7.	8.
Eight 5's are	9 and $__?$ are 15	4 and 3 are	There are $__?$ 5's in 45
9.	10.	11.	12.
6 plus 4 =	There are $__?$ 5's in 35	The sum of 8 and 4 is	$2 \times 5 =$

Learning More about Using 2 in Dividing



Mary and five of her friends were playing on the lawn. Mary's older sister surprised them by giving them some candy. "Mary, here are 12 pieces of candy for you and your little friends," said Mary's sister. "You may divide it." Mary took the 12 pieces of candy and gave each girl 2 pieces. Did she have enough candy to go around? How many 2's are there in 12? If Mary gave 2 pieces to each little girl, how many pieces would she need for 6 girls?

How many 2's are there in 12?

$$12 \div 2 = ?$$

Think the right answers for these

1.

2.

(A) There are ___?___ 2's in 12

$$12 \div 2 = \text{___?___}$$

(B) There are ___?___ 4's in 8

$$8 \div 4 = \text{___?___}$$

1.	2.
(C) There are <u> ? </u> 5's in 10	$10 \div 5 = \underline{\quad? \quad}$
(D) There are <u> ? </u> 2's in 8	$8 \div 2 = \underline{\quad? \quad}$
(E) There are <u> ? </u> 3's in 6	$6 \div 3 = \underline{\quad? \quad}$
(F) There are <u> ? </u> 2's in 4	$4 \div 2 = \underline{\quad? \quad}$
(G) There are <u> ? </u> 8's in 16	$16 \div 8 = \underline{\quad? \quad}$
(H) There are <u> ? </u> 2's in 6	$6 \div 2 = \underline{\quad? \quad}$
(I) There are <u> ? </u> 2's in 10	$10 \div 2 = \underline{\quad? \quad}$
(J) There are <u> ? </u> 2's in 16	$16 \div 2 = \underline{\quad? \quad}$
(K) There are <u> ? </u> 6's in 12	$12 \div 6 = \underline{\quad? \quad}$
(L) There are <u> ? </u> 2's in 14	$14 \div 2 = \underline{\quad? \quad}$
(M) There are <u> ? </u> 9's in 18	$18 \div 9 = \underline{\quad? \quad}$
(N) There are <u> ? </u> 7's in 14	$14 \div 7 = \underline{\quad? \quad}$
(O) There are <u> ? </u> 2's in 18	$18 \div 2 = \underline{\quad? \quad}$

Sometimes another sign is used for division examples.

For example, $12 \div 2 = 6$ may be written: $2 \overline{)12}$. This may be read, "12 divided by 2 equals 6" or "2 into 12, 6 times."

Think the right answers for these:

3.	4.
(A) $14 \div 2 = 7$	$2 \overline{)14}$
(B) $8 \div 4 = 2$	$4 \overline{)8}$
(C) $10 \div 5 = 2$	$5 \overline{)10}$
(D) $8 \div 2 = \underline{\quad? \quad}$	$2 \overline{)8}$
(E) $6 \div 3 = \underline{\quad? \quad}$	$3 \overline{)6}$

	3.	4.
(F)	$4 \div 2 = __? __$	$2\overline{)4}$
(G)	$16 \div 8 = __? __$	$8\overline{)16}$
(H)	$6 \div 2 = __? __$	$2\overline{)6}$
(I)	$10 \div 2 = __? __$	$2\overline{)10}$
(J)	$16 \div 2 = __? __$	$2\overline{)16}$
(K)	$12 \div 6 = __? __$	$6\overline{)12}$
(L)	$12 \div 2 = __? __$	$2\overline{)12}$
(M)	$18 \div 9 = __? __$	$9\overline{)18}$
(N)	$14 \div 7 = __? __$	$7\overline{)14}$
(O)	$18 \div 2 = __? __$	$2\overline{)18}$

Whenever you see the sign \div or the sign $\overline{)}$, divide.

The name of the answer in division is the quotient.

In $12 \div 2 = 6$, 6 is the quotient. In $2\overline{)6}$, 3 is the quotient.

Subtraction Practice

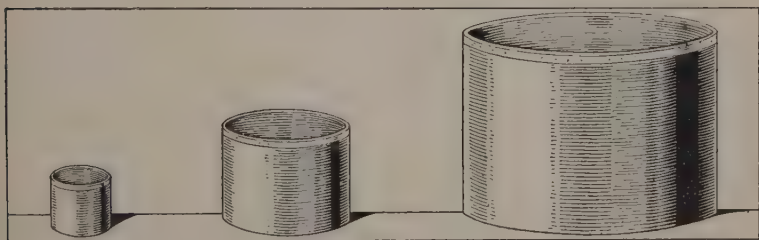
Subtract, and write the differences on a folded paper.

	1.	2.	3.	4.	5.	6.
(A)	$\begin{array}{r} 94 \\ 79 \\ \hline \end{array}$	$\begin{array}{r} 100 \\ 99 \\ \hline \end{array}$	$\begin{array}{r} 597 \\ 360 \\ \hline \end{array}$	$\begin{array}{r} 216 \\ 209 \\ \hline \end{array}$	$\begin{array}{r} 143 \\ 67 \\ \hline \end{array}$	$\begin{array}{r} 479 \\ 423 \\ \hline \end{array}$
(B)	$\begin{array}{r} 555 \\ 16 \\ \hline \end{array}$	$\begin{array}{r} 92 \\ 89 \\ \hline \end{array}$	$\begin{array}{r} 634 \\ 601 \\ \hline \end{array}$	$\begin{array}{r} 486 \\ 237 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ 6 \\ \hline \end{array}$	$\begin{array}{r} 368 \\ 30 \\ \hline \end{array}$

	1.	2.	3.	4.	5.	6.
(C)	116 <u>62</u>	849 <u>82</u>	748 <u>2</u>	540 <u>524</u>	829 <u>264</u>	17 <u>9</u>
(D)	29 <u>8</u>	101 <u>95</u>	104 <u>85</u>	695 <u>8</u>	580 <u>490</u>	931 <u>352</u>
(E)	394 <u>346</u>	79 <u>40</u>	812 <u>27</u>	300 <u>153</u>	506 <u>8</u>	457 <u>398</u>

Quarts, Pecks, and Bushels

Here are pictures of a quart measure, a peck measure, and a bushel measure.



Perhaps your teacher will let you fill a quart measure with sand from the sand table and then empty it into a peck measure. If you should keep doing this until the peck measure was full, you would find that it takes 8 quarts to make a peck.

A short way of writing "peck" or "pecks" is pk.

$8 \text{ quarts} = 1 \text{ peck}$ $8 \text{ qt.} = 1 \text{ pk.}$

Do you know how many pecks it takes to make a bushel?

If you were to keep filling a peck measure with oats or wheat and emptying the peck measure into a bushel measure until the bushel measure was full, you would find that **there are four pecks in a bushel.**

A short way of writing "bushel" or "bushels" is **bu.**

$4 \text{ pecks} = 1 \text{ bushel}$ $4 \text{ pk.} = 1 \text{ bu.}$
--

Think the right answers for these:

	1.	2.
(A)	2 bushels = <u> ? </u> pecks	5 pecks = <u> ? </u> quarts
(B)	1 peck = <u> ? </u> quarts	2 pecks = <u> ? </u> quarts
(C)	5 bushels = <u> ? </u> pecks	1 bushel = <u> ? </u> pecks

General Practice 10

Write the answers on a sheet of paper. Time allowed: 4 minutes.

1.	2.	3.	4.
$9 + 5 =$	$2 \times 8 =$	6 from 6 =	$40 \div 5 =$
5.	6.	7.	8.
$5 \overline{)20}$	7 and 5 are	2 times 4 =	9 and <u> ? </u> are 11
9.	10.	11.	12.
$12 - 7 =$	There are <u> ? </u> 5's in 15	6 plus 9 =	Two 9's are

Using 4 in Multiplying and Dividing

1. Count by 4's from 4 to 36, saying, "4, 8, 12," and so on.

2. Put a strip of paper under these columns, add, and write the sums on the paper.

		4			
		4		4	
	4	4		4	
	4	4		4	4
	4	4		4	4
4	4	4		4	4
4	4	4	4	4	4
4	4	4	4	4	4
<u>4</u>	<u>4</u>	<u>4</u>	<u>4</u>	<u>4</u>	<u>4</u>

3. Four 4's are how many?

4. How many 4's are there in 16?

5. Seven 4's are how many?

6. How many 4's are there in 28?

7. Nine 4's are how many?

8. How many 4's are there in 36?

9. Three 4's are how many?

10. How many 4's are there in 12?

11. Eight 4's are how many?

12. How many 4's are there in 32?

13. Six 4's are how many?

14. How many 4's are there in 24?

Add: Add:

3
3
3
3

4
4
4
4

15. How many are four 3's?

16. How many are three 4's?

17. Do four 3's = three 4's?

18. Is $3 \times 4 = 4 \times 3$?

19. Think the right answers for these:

(A) $6 \times 4 = 4 \times 6$

$9 \times 4 = 4 \times 9$

(B) $3 \times 4 = __? __$

$4 \times 6 = __? __$

(C) $4 \times 9 = __? __$

$7 \times 4 = __? __$

(D) $4 \times 7 = __? __$

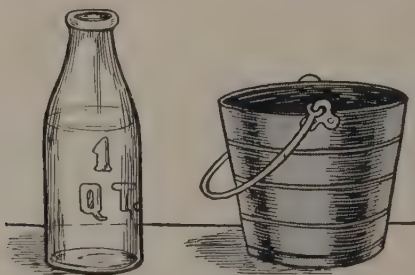
$4 \times 8 = __? __$

(E) $8 \times 4 = __? __$

$4 \times 3 = __? __$

Quarts and Gallons

Here are pictures of a quart bottle and a one-gallon pail. If you were to keep filling the quart bottle with



water and emptying it into the gallon pail until the pail was full, you would find that it **takes four quarts to make one gallon**. You have already learned that there are two pints in one quart. Then how many pints are there in a gallon?

A short way of writing “gallon” or “gallons” is **gal.**

$\begin{aligned} 1 \text{ quart (qt.)} &= 2 \text{ pints (pt.)} \\ 1 \text{ gallon (gal.)} &= 4 \text{ quarts (qt.)} = 8 \text{ pints (pt.)} \end{aligned}$

Think the right answers for these:

1.	2.
(A) 1 quart = $\underline{\hspace{1cm}}\text{?}\underline{\hspace{1cm}}$ pints	7 quarts = $\underline{\hspace{1cm}}\text{?}\underline{\hspace{1cm}}$ pints
(B) 4 pints = $\underline{\hspace{1cm}}\text{?}\underline{\hspace{1cm}}$ quarts	2 pints = $\underline{\hspace{1cm}}\text{?}\underline{\hspace{1cm}}$ quart
(C) 28 quarts = $\underline{\hspace{1cm}}\text{?}\underline{\hspace{1cm}}$ gallons	8 quarts = $\underline{\hspace{1cm}}\text{?}\underline{\hspace{1cm}}$ gallons
(D) 2 gallons = $\underline{\hspace{1cm}}\text{?}\underline{\hspace{1cm}}$ quarts	12 pints = $\underline{\hspace{1cm}}\text{?}\underline{\hspace{1cm}}$ quarts
(E) 2 quarts = $\underline{\hspace{1cm}}\text{?}\underline{\hspace{1cm}}$ pints	6 quarts = $\underline{\hspace{1cm}}\text{?}\underline{\hspace{1cm}}$ pints
(F) 8 pints = $\underline{\hspace{1cm}}\text{?}\underline{\hspace{1cm}}$ quarts	8 gallons = $\underline{\hspace{1cm}}\text{?}\underline{\hspace{1cm}}$ quarts
(G) 8 quarts = $\underline{\hspace{1cm}}\text{?}\underline{\hspace{1cm}}$ pints	4 quarts = $\underline{\hspace{1cm}}\text{?}\underline{\hspace{1cm}}$ pints
(H) 14 pints = $\underline{\hspace{1cm}}\text{?}\underline{\hspace{1cm}}$ quarts	6 gallons = $\underline{\hspace{1cm}}\text{?}\underline{\hspace{1cm}}$ quarts
(I) 5 quarts = $\underline{\hspace{1cm}}\text{?}\underline{\hspace{1cm}}$ pints	9 quarts = $\underline{\hspace{1cm}}\text{?}\underline{\hspace{1cm}}$ pints
(J) 1 gallon = $\underline{\hspace{1cm}}\text{?}\underline{\hspace{1cm}}$ quarts	16 pints = $\underline{\hspace{1cm}}\text{?}\underline{\hspace{1cm}}$ quarts
(K) 18 pints = $\underline{\hspace{1cm}}\text{?}\underline{\hspace{1cm}}$ quarts	20 quarts = $\underline{\hspace{1cm}}\text{?}\underline{\hspace{1cm}}$ gallons
(L) 16 quarts = $\underline{\hspace{1cm}}\text{?}\underline{\hspace{1cm}}$ gallons	6 pints = $\underline{\hspace{1cm}}\text{?}\underline{\hspace{1cm}}$ quarts
(M) 3 gallons = $\underline{\hspace{1cm}}\text{?}\underline{\hspace{1cm}}$ quarts	5 gallons = $\underline{\hspace{1cm}}\text{?}\underline{\hspace{1cm}}$ quarts
(N) 10 pints = $\underline{\hspace{1cm}}\text{?}\underline{\hspace{1cm}}$ quarts	3 quarts = $\underline{\hspace{1cm}}\text{?}\underline{\hspace{1cm}}$ pints
(O) 4 gallons = $\underline{\hspace{1cm}}\text{?}\underline{\hspace{1cm}}$ quarts	36 quarts = $\underline{\hspace{1cm}}\text{?}\underline{\hspace{1cm}}$ gallons
(P) 4 quarts = $\underline{\hspace{1cm}}\text{?}\underline{\hspace{1cm}}$ gallon	9 gallons = $\underline{\hspace{1cm}}\text{?}\underline{\hspace{1cm}}$ quarts
(Q) 7 gallons = $\underline{\hspace{1cm}}\text{?}\underline{\hspace{1cm}}$ quarts	12 quarts = $\underline{\hspace{1cm}}\text{?}\underline{\hspace{1cm}}$ gallons
(R) 24 quarts = $\underline{\hspace{1cm}}\text{?}\underline{\hspace{1cm}}$ gallons	32 quarts = $\underline{\hspace{1cm}}\text{?}\underline{\hspace{1cm}}$ gallons

Problems

1. Grace wants to buy some pencils. She can get one kind for 4 cents each. How much will she have to pay for 3 pencils of that kind?

Think, "Three 4's are $\underline{\hspace{1cm}}\text{?}\underline{\hspace{1cm}}$."

2. Charles receives 2 cents for each newspaper he sells. On Monday he sold 9 newspapers. How much did he receive for his newspapers on Monday?

3. I wish to give away 32 apples. I decide to give them to 4 children. If each child is to get the same number of apples, how many should I give to each child?

Think, "There are $\frac{32}{4}$ 4's in 32."

4. One day Harry walked 9 miles. The next week he walked 4 times as far. How far did he walk that week?

5. Three pencils cost John 15 cents. If each pencil cost him the same amount, how much did he pay for 1 pencil?

6. If one quart of milk costs Jane's mother 9 cents, how much will 4 quarts cost her? How much will 5 quarts cost her? How much will 2 quarts cost her?

7. Mary's mother gave her 20 cents to buy 4 oranges. If each orange cost the same amount, how much did one orange cost?

8. Henry set out 4 rows of tomato plants. He set 9 plants in each row. How many tomato plants did he set out in all? How many tomato plants did he set in 2 rows?

9. There are 24 desks in the third-grade room in our school. If there are 4 rows with the same number of desks in each row, how many desks are there in each row?

10. John bought 4 apples for 28 cents. If each apple cost the same number of cents, how much did he pay for each apple? If all had cost him 32 cents, how much would he have paid for each apple? If he had paid 24 cents for all, how much would each apple have cost?

Addition Practice

Add, and write the sums on a strip of paper.

1.	2.	3.	4.	5.	6.	7.	8.	9.
1	8	6	1	5	0	3	2	0
4	0	2	6	3	6	0	6	4
8	5	1	9	4	9	9	8	7
4	2	6	0	2	0	3	1	1
2	3	7	2	7	5	6	5	8
1	6	1	7	4	2	0	3	6

Another Form for Multiplication

You have already learned that you may write numbers in a column in addition and subtraction. You may do this in multiplication, too. The only thing you have to be careful about is to mark each example plainly so that you can tell whether to add, subtract, or multiply. You may mark a column with either words or signs.

Add:

$$\begin{array}{r} 4 \\ 3 \\ \hline \end{array}$$

Subtract:

$$\begin{array}{r} 4 \\ 3 \\ \hline \end{array}$$

Multiply:

$$\begin{array}{r} 4 \\ 3 \\ \hline \end{array}$$

or

$$\begin{array}{r} 4 \\ + 3 \\ \hline \end{array}$$

$$\begin{array}{r} 4 \\ - 3 \\ \hline \end{array}$$

$$\begin{array}{r} 4 \\ \times 3 \\ \hline \end{array}$$

You will use these forms often from now on.

Review of Multiplication and Division Facts about 4

Here are most of the facts you need to know when you use 4 in multiplying or dividing. See if you know them.

1.	2.
(A) Three 4's are $_\?_\$	The quotient of $12 \div 4$ is $_\?_\$
(B) $4\overline{)36}$	9 times 4 are $_\?_\$
(C) 28 divided by 4 = $_\?_\$	$4 \times 7 = _\?_\$
(D) There are $_\?_\$ 4's in 20	The product of 5×4 is $_\?_\$
(E) Two 4's are $_\?_\$	Eight divided by four equals $_\?_\$

Multiply:

	1.	2.	3.	4.	5.
(F)	$\begin{array}{r} 3 \\ 4 \end{array}$	$\begin{array}{r} 4 \\ 6 \end{array}$	$\begin{array}{r} 7 \\ 4 \end{array}$	$\begin{array}{r} 4 \\ 8 \end{array}$	$\begin{array}{r} 4 \\ 3 \end{array}$
(G)	$\begin{array}{r} 8 \\ 4 \end{array}$	$\begin{array}{r} 4 \\ 9 \end{array}$	$\begin{array}{r} 4 \\ 4 \end{array}$	$\begin{array}{r} 9 \\ 4 \end{array}$	$\begin{array}{r} 6 \\ 4 \end{array}$

Divide:

	1.	2.	3.
(H)	$3\overline{)12}$	$6\overline{)24}$	$4\overline{)28}$
(I)	$4\overline{)32}$	$9\overline{)36}$	$4\overline{)16}$
(J)	$4\overline{)12}$	$7\overline{)28}$	$4\overline{)24}$
(K)	$8\overline{)32}$	$4\overline{)36}$	$4\overline{)8}$

General Practice 11

Write the answers on a sheet of paper. Time allowed: 12 minutes.

1.	2.	3.	4.
Add:	$4 \times 9 =$	Divide:	Subtract:
293		$5 \overline{)20}$	937
<u>504</u>			<u>105</u>
5.	6.	7.	8.
Two 6's are	$24 \div 4 =$	Add:	Subtract:
		19	529
		27	<u>387</u>
		16	
		<u>19</u>	

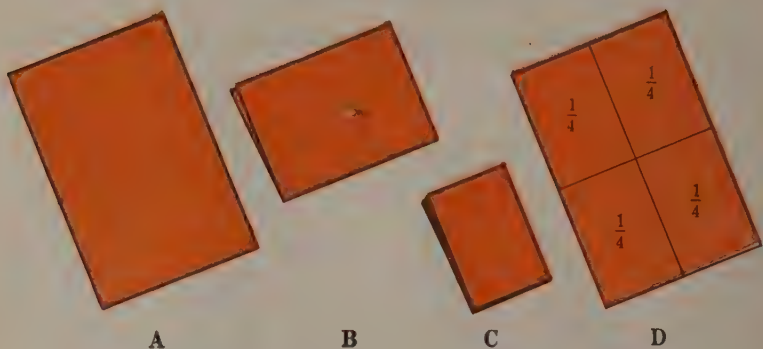
9. Mary's mother gave her 28 baby chicks, but 11 of them died. How many chicks were left?

10. Tom's father put \$325 in the bank one week, \$128 the next week, and \$542 the next week. During the three weeks, how much did Tom's father put in the bank all together?

11. A man earned 20 dollars in 4 days. If he earned the same amount each day, how much did he earn in one day?

12. There were 9 tables in a tea room. Four people could sit at each table. When all the tables were filled, how many people were seated at the tables in the tea room?

Meaning of One-Fourth



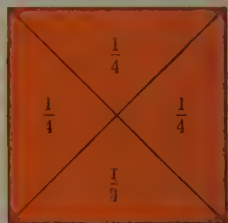
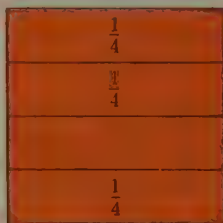
1. Take a sheet of paper and fold it from bottom to top into two equal parts, as shown in figure B above.

2. Now fold it again from right to left into two equal parts, as shown in figure C. Now unfold the paper, as shown in figure D.

3. When a sheet of paper is folded into 4 equal parts, what is one of the parts called?

When anything is divided into four equal parts, one of the parts is called one-fourth. One-fourth is printed in figures like this: $\frac{1}{4}$; and it is written like this: $\frac{1}{4}$.

4. Fold a sheet of paper like each of the following and tell what each one of the parts is called.



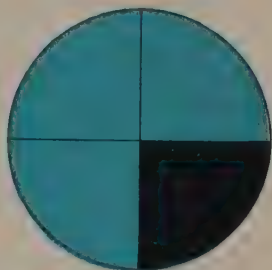
5. What part of this circle is black?

6. How many quarts are there in a gallon? A quart is $\frac{1}{4}$ of 1 gallon.

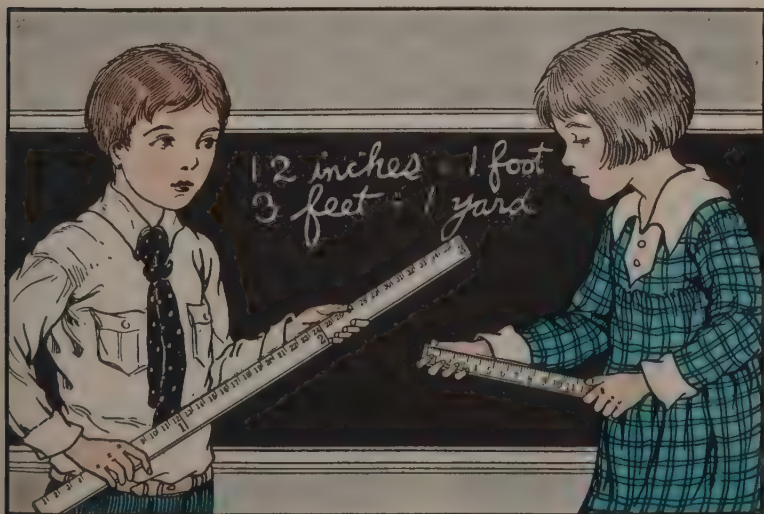
7. Put 8 cents in play money on your desk. Divide it into 4 equal groups. 2 cents is what part of 8 cents?

8. What is one-fourth of eight? One-fourth of sixteen? One-fourth of twelve? One-fourth of twenty?

9. What is $\frac{1}{4}$ of 8? $\frac{1}{4}$ of 16? $\frac{1}{4}$ of 12?
 $\frac{1}{4}$ of 20? $\frac{1}{4}$ of 24? $\frac{1}{4}$ of 32? $\frac{1}{4}$ of 28? $\frac{1}{4}$ of 36?



Inches, Feet, and Yards



1. The girl in the picture is holding a foot ruler.
2. The boy has a yardstick.

3. Measure the length of a yardstick with a foot ruler.

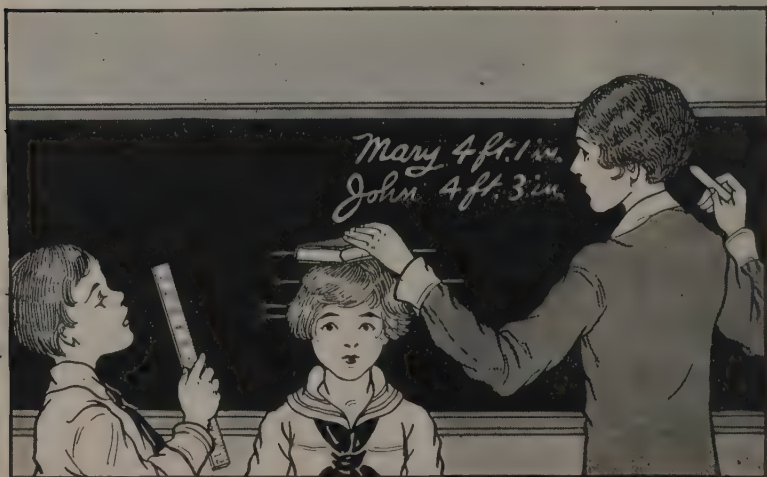
4. The yardstick is how many feet long? The yardstick is how many inches long?

5. How many inches make a foot? How many feet make a yard? How many inches make a yard?

$12 \text{ inches} = 1 \text{ foot}$ $12 \text{ in.} = 1 \text{ ft.}$
$3 \text{ feet} = 1 \text{ yard}$ $3 \text{ ft.} = 1 \text{ yd.}$
$36 \text{ inches} = 1 \text{ yard}$ $36 \text{ in.} = 1 \text{ yd.}$

Notice in the table the short way of writing these measures of length.

6. How tall are you?



7. The teacher is measuring the height of some pupils. These are the heights:

Mary: 4 ft. 1 in.

John: 4 ft. 3 in.

Kate: 3 ft. 10 in.

James: 4 ft. 2 in.

Charles: 3 ft. 11 in.

Take a yardstick or ruler and mark a place on the blackboard to show how tall each of the pupils is.

8. In making some curtains Mary's mother cut off a piece of cloth that was 2 yd. 1 ft. 6 in. long. Measure a piece of string that is the same length as the cloth Mary's mother cut.

9. How many feet wide is your schoolroom?

10. How many feet long is your schoolroom?

11. Measure the width and length of your desk in inches and tell your teacher what you get.

Using 3 in Multiplying and Dividing

1. Count by 3's from 3 to 27, saying, "3, 6, 9," and so on.

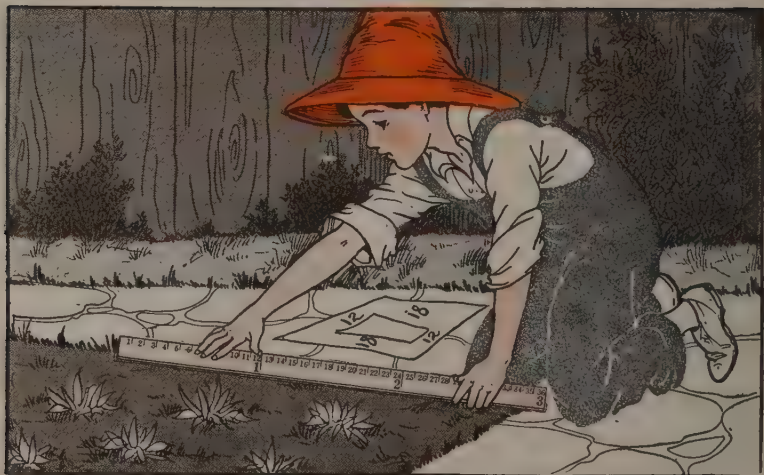
2. James was measuring his garden with a yardstick. In doing so, he found that he had to measure off the length of the yardstick 4 times to find the width of the garden, and he had to measure off the length of the yardstick 6 times to find the length of the garden. How many feet wide was James's garden? How many feet long was it?

Four 3's are ___?___

Six 3's are ___?___

How many 3's are there
in 12?

How many 3's are there
in 18?



3. Think how many the following are:

- (A) Three 3's are $__?$ Six 3's are $__?$
 (B) There are $__?$ 3's in 18 There are $__?$ 3's in 27
 (C) Seven 3's are $__?$ There are $__?$ 3's in 9
 (D) There are $__?$ 3's in 21 There are $__?$ 3's in 24
 (E) Nine 3's are $__?$ Eight 3's are $__?$

4. Do you think $6 \times 3 = 3 \times 6$? $7 \times 3 = 3 \times 7$?
 $8 \times 3 = 3 \times 8$? $9 \times 3 = 3 \times 9$?

Addition Practice

Add, and write the sums on a strip of paper.

1.	2.	3.	4.	5.	6.	7.	8.	9.
3	0	5	2	1	4	0	3	2
2	8	1	1	0	4	1	3	2
4	3	3	8	9	7	8	4	9
0	1	8	3	3	2	3	1	3
9	9	7	9	6	6	9	8	4
<u>4</u>	<u>3</u>	<u>1</u>	<u>2</u>	<u>7</u>	<u>1</u>	<u>5</u>	<u>4</u>	<u>1</u>

Meaning of One-Third



Miss Wilson, a teacher of the third grade, thought it would be fun to have a little party at school just before Christmas and give each of her pupils a bag of candy. There are 8 pupils in her class: Jane, Mary, Kate, and Grace; and George, Tom, Charles, and Edward. So one day Miss Wilson brought 8 bags of jelly beans to school to give to her pupils. In one bag there were 6 jelly beans; in another, 9 jelly beans; in another, 12; and so on, the others having 15, 18, 21, 24, and 27 jelly beans each.

Teacher: Children, I have brought each one of you a bag of candy, but there is not the same amount in each bag. Before we have our little party and eat our candy, I want each one of you to choose two others and then divide your candy into 3 equal parts. First, let me know how many pieces each one of you has.

Jane: I have 6 jelly beans.

Mary: I have 27 jelly beans.

Kate: I have 15 jelly beans.

Grace: I have 21 jelly beans.

George: I have 18 jelly beans.

Tom: I have 12 jelly beans.

Charles: I have 24 jelly beans.

Edward: I have 9 jelly beans.

Teacher: All right. Jane, you choose two others, and I will show you how to divide your candy into 3 equal parts.

Jane: I will choose Kate and Charles.

Teacher: Now, Jane, you have 6 jelly beans, and we want to divide them into 3 equal parts. Do you see that we can put 2 of them here for Kate and 2 more here for Charles, and that you will have 2 left for yourself?



Jane: Yes, Miss Wilson, I see that I can give 2 jelly beans to Kate and 2 jelly beans to Charles and have 2 jelly beans left for myself.

Teacher: When you divide anything into 3 equal parts, do you know what one of the parts is called, Jane?

Jane: Yes, Miss Wilson. It is called **one-third**.

Teacher: That is right. When it is printed it looks like this: $\frac{1}{3}$; and when it is written it looks like this: $\frac{1}{3}$. You gave Kate one-third of your candy, you gave Charles one-third of your candy, and you kept one-third of your candy for yourself. Now, children, what

is one-third of 6? Yes, it is 2. Mary, you choose two others and tell how to divide the candy I gave you.

So Mary, Kate, Grace, George, Tom, Charles, and Edward divided their candy, each with two others, and all had a fine time at Miss Wilson's party.

Can you tell how each divided his or her candy?

1. What is one-third of six? One-third of twelve? One-third of twenty-seven?

2. What is $\frac{1}{3}$ of 6? $\frac{1}{3}$ of 12? $\frac{1}{3}$ of 27? $\frac{1}{3}$ of 9? $\frac{1}{3}$ of 15? $\frac{1}{3}$ of 21? $\frac{1}{3}$ of 18? $\frac{1}{3}$ of 24?

3. To find one-third of a number, by what must you divide?

General Practice 12

Write the answers on a sheet of paper. Time allowed: 12 minutes.

1.	2.	3.	4.
9 less 0 =	5 + 5 =	$\frac{1}{2}$ of 6 =	5 × 3 =
5.	6.	7.	8.
14 ÷ 2 =	6 from 14 =	3 and 4 are	Five 7's are
9.	10.	11.	12.
0 plus 5 =	4 $\overline{)28}$	2 and _?_ are 2	6 times 2 =

13. There are 5 cents, you remember, in a nickel. How many nickels are there in 25 cents?

14. George was sent to the post office to get five 2-cent stamps. How much did they cost?

15. A boys' baseball club paid \$4 for balls, \$3 for bats, and \$7 for gloves. How much did the club pay for the balls, bats, and gloves?

16. Frank has 75 cents. How much will he have left if he buys a book for 57 cents?

Subtraction Practice

Subtract, and write the differences on a folded paper.

	1.	2.	3.	4.	5.	6.
(A)	856	9	513	398	303	101
	<u>770</u>	<u>5</u>	<u>504</u>	<u>5</u>	<u>295</u>	<u>93</u>
(B)	402	333	10	111	324	402
	<u>396</u>	<u>238</u>	<u>6</u>	<u>107</u>	<u>200</u>	<u>398</u>

Problems

1. There are 9 boys on a baseball team. How many ball teams can be formed from 18 boys? From 36 boys? From 27 boys?

2. Kate's mother can bake 8 small cakes in 1 pan. How many small cakes can she bake in 3 pans just like the first pan?

3. Mary gave a little party. She had 24 sandwiches, 16 pieces of cake, and 8 cups of cocoa. There were 8 girls at the party. If each had the same amount of food, how many sandwiches, pieces of cake, and cups of cocoa did each girl have?

4. Fred had 9 cents. His brother had 3 times as much money as Fred, and his sister had 2 times

as much as Fred. How much money did Fred's brother have? How much money did Fred's sister have?

5. George bought 3 pencils at 6 cents each. How much did they cost in all?

6. Tom's aunt wishes to give away 15 story books. She has decided to give them to 3 children. If she gives each child the same number of books, how many books should she give to each child? Suppose that she divides the books equally among 5 children. How many books should each child receive?

7. If Tom sets out 24 plants in 8 equal rows, how many plants must Tom put in 1 row? How many would there be in each row if he set them in 6 rows? In 4 rows? In 3 rows?

8. In buying a bicycle, Henry paid \$6 each week for five weeks. How much did he pay for the bicycle?

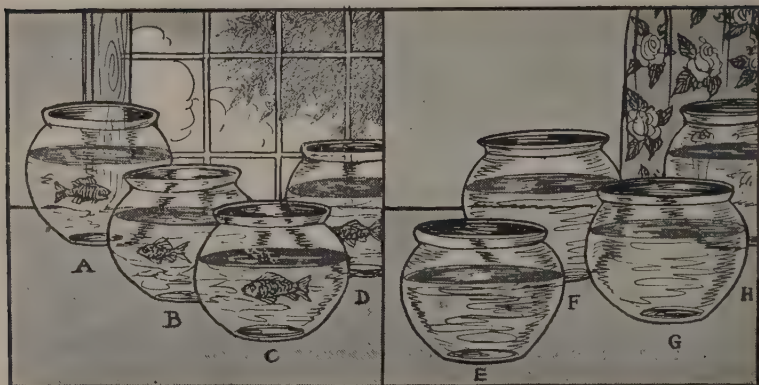
9. There are 9 boys on a baseball team. How many boys are there on 3 ball teams? On 5 teams? On 4 teams?

10. Grace had 18 cookies, which she divided equally among 6 of her friends. How many cookies did each receive?

11. Sunday Mr. and Mrs. Davis and their three children spent the day at the seashore. In the morning the children looked for shells in the sand. Dot, who is the youngest, found 3 shells. Her brother Ted found 4 times as many shells as Dot did. How many shells did Ted find? Bob, who is the oldest, found 5 times as many shells as Dot. How many shells did Bob find?

12. There are 12 canoes on the lake. One-third of them are painted red. How many canoes are red?

Using 1 and 0 in Multiplying



How many goldfish are there in globe A? In globe B? In globe C? In globe D?

How many goldfish are there in globes A and B together? Two ones are how many? $2 \times 1 = \underline{\quad} \times \underline{\quad}$.

How many goldfish are there in globes A, B, and C together? Three 1's are how many? $3 \times 1 = \underline{\quad} \times \underline{\quad}$.

Do you see that $2 \times 1 = 2$, and that $3 \times 1 = 3$?

What do you think 4×1 is?

Think the right answers for these:

	1.	2.	3.
(A)	$2 \times 1 = 2$	$3 \times 1 = 3$	$4 \times 1 = 4$
(B)	$5 \times 1 = \underline{\quad} \times \underline{\quad}$	$6 \times 1 = \underline{\quad} \times \underline{\quad}$	$7 \times 1 = \underline{\quad} \times \underline{\quad}$
(C)	$8 \times 1 = \underline{\quad} \times \underline{\quad}$	$9 \times 1 = \underline{\quad} \times \underline{\quad}$	
(D)	$1 \times 1 = 1$	$1 \times 2 = 2$	$1 \times 3 = 3$
(E)	$1 \times 5 = 5$	$1 \times 6 = \underline{\quad} \times \underline{\quad}$	$1 \times 7 = \underline{\quad} \times \underline{\quad}$
(F)	$1 \times 9 = \underline{\quad} \times \underline{\quad}$	$1 \times 4 = \underline{\quad} \times \underline{\quad}$	$1 \times 8 = \underline{\quad} \times \underline{\quad}$

$1 \times \text{any number, or any number} \times 1 = \text{the number}$

How many goldfish are there in globe E? In globe F? In globe G? In globe H?

How many goldfish are there in globes E and F together? Two 0's are how many? $2 \times 0 = __? __$.

How many goldfish are there in globes E, F, and G together? Three 0's are how many? $3 \times 0 = __? __$.

Do you see that $2 \times 0 = 0$, and that $3 \times 0 = 0$, also?

What do you think 4×0 is?

Think the right answers for these:

	1.	2.	3.
(G)	$1 \times 0 = 0$	$3 \times 0 = 0$	$2 \times 0 = 0$
(H)	$4 \times 0 = __? __$	$6 \times 0 = __? __$	$5 \times 0 = __? __$
(I)	$8 \times 0 = __? __$	$9 \times 0 = __? __$	$7 \times 0 = __? __$
(J)	$0 \times 0 = 0$	$0 \times 1 = 0$	$0 \times 2 = 0$
(K)	$0 \times 3 = __? __$	$0 \times 4 = __? __$	$0 \times 6 = __? __$
(L)	$0 \times 5 = __? __$	$0 \times 7 = __? __$	$0 \times 8 = __? __$
(M)	$0 \times 9 = __? __$		

$0 \times \text{any number, or any number} \times 0 = 0$
--

Problems

1. Charles found a robin's nest with 1 egg in it, a blue jay's nest with 1 egg in it, a sparrow's nest with 1 egg in it, and a crow's nest with 1 egg in it. How many birds' eggs did Charles find all together?

2. Henry wanted some pennies with which to buy ice cream. He felt in his right pocket, but he found no pennies there. Then he felt in his left pocket, but there were no pennies there either. Then he looked in

the drawer of his table, but there were no pennies in the drawer. How many pennies did Henry find all together?

3. Each of four little girls has a paper bag. There isn't any candy in any of the bags at all. If the four little girls put all their candy into one big bag, how much candy will there be in the big bag?

4. Robert has 1 top, Jack has 1 top, and Edward has 1 top. If they put all their tops in a ring on the ground, how many tops will there be in the ring?

General Practice 13

Write the answers on a sheet of paper. Time allowed: 12 minutes.

1.	2.	3.	4.
Add:		Subtract:	
17	7 qt. = <u> </u> ? <u> </u> pt.	642	$\frac{1}{2}$ of 18 =
25		<u>389</u>	
<u>49</u>			
5.	6.	7.	8.
Subtract:	Divide:	Add:	
901		3	
<u>476</u>	7) <u>14</u>	19	2 gal. = <u> </u> ? <u> </u> qt.
		26	
		19	
		17	
		<u>9</u>	

9. Henry wishes to buy some stamps. He knows what 1 stamp will cost and how many stamps he

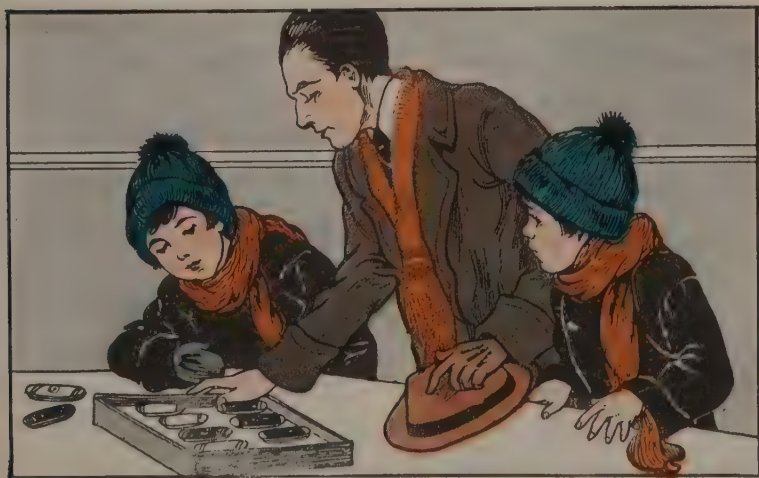
wants. To find what the stamps he wants will cost, he must ____?__.

10. Madeline bought a dozen eggs. (A dozen, you know, is 12.) While walking home she slipped and broke one-third of them. How many eggs did she break?

11. Charles sold 214 papers one week, 289 papers the next week, and 312 papers the third week. How many papers did he sell all together?

12. Henry caught 31 fish, but he threw 13 small ones back into the water. How many fish did he have to take home?

Multiplying Two-Figure Numbers



Mr. Smith is looking at some pocket knives in the store. He is thinking it would be nice to give each of his twin boys a pocket knife for his birthday. Mr. Smith can get a good knife for 43¢. What will 2 of them cost Mr. Smith?

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43 Two 3's are how many?

2 Two 4's are how many?

What is 43×2 ? What is $43¢ \times 2$? What is $\$.43 \times 2$?

This kind of problem in multiplication is not much harder than some that you have had. Maybe you already know how this one can be worked.

This is all you have to do: Think,

$$\begin{array}{r} 43 \quad 43¢ \quad \$.43 \\ \underline{2} \quad \underline{2} \quad \underline{2} \\ 86 \quad 86¢ \quad \$.86 \end{array}$$
 "Two 3's are 6." Write 6 in the product, under the 2. Then think, "Two 4's are 8." Write 8 in the product, under the 4.

Then, $43 \times 2 = 86$. Since $43 \times 2 = 86$, $43¢ \times 2 = 86¢$, or $\$.43 \times 2 = \$.86$. Mr. Smith will have to pay 86 cents for the two knives for his twins.

Multiply 32 by 2.

32 Two 2's are how many?

2 Two 3's are how many?

To multiply 32 by 2, think, "Two 2's are 4." Write 4 in the ones' column.

Then think, "Two 3's are 6." Write 6 in the tens' column.

$$32 = 3 \text{ tens} + 2 \text{ ones} = 30 + 2$$

$$\underline{2} = \underline{\quad} \quad \underline{2} = \underline{\quad} \quad \underline{2}$$

$$64 = 6 \text{ tens} + 4 \text{ ones} = 60 + 4$$

Then, $32 \times 2 = 64$.

What is $21 + 21 + 21 + 21$?

What is 21×4 ?

What is $42 + 42$?

What is 42×2 ?

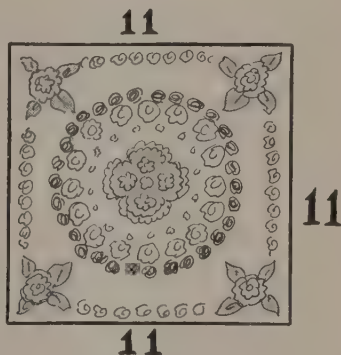
Problems

1. A flower bed like the one in the picture is 11 feet on each side. How many feet are there on 3 of the sides? On 2 of the sides?

On all 4 sides?

2. A bus can take 10 passengers in 1 trip. How many passengers can it take in 5 trips?

3. If I spend 12 cents for car fare in one day, at the same rate how many cents shall I spend in 3 days? In 2 days? In 4 days?



4. William's father earns \$42 a week. How much will he earn in 2 weeks?

5. A spelling book costs 33 cents. If the teacher buys three of these books, what will all of them cost?

6. What will 4 tops cost at 12 cents each?

7. If Frank saves 11 cents each day, how much will he save in 4 days? In 8 days? In 7 days?

8. Some girls in the third grade had a candy sale, with three tables where you could buy candy. Ruth and Alice sold 21 bars of candy at 4 cents each at their table. Grace and Jane sold 32 bars at 3 cents each at their table. May and Helen sold 12 bars at 4 cents each at their table. How much did Ruth and Alice take in? How much did Grace and Jane take in? How much did May and Helen take in?

Addition Practice

Add, and write the sums on a strip of paper.

1.	2.	3.	4.	5.	6.	7.	8.	9.
6	2	7	1	4	3	1	5	0
0	5	0	3	3	4	5	2	5
6	8	4	5	5	7	8	3	9
5	1	5	1	1	1	3	5	0
9	6	8	8	7	8	1	4	4
0	2	0	5	4	3	8	0	2

Proving Multiplication

After you have multiplied two numbers, it is well to find out whether you have made any mistakes or not. You can do this by finding the answer another way. See how the following example is worked and proved.

Multiply 32 by 4, and prove.

		If you multiply 32 by 4, you get	
WORK	PROOF	128. Now, to find out whether	
Multiply:	Add:	this is correct, write four 32's in a	
32	32	column and add them. This also	
4	32	gives 128. To work the example,	
<u>128</u>	32	you multiply. To prove your work,	
	32	you add.	
	<u>128</u>		

In working examples, if you get exactly the same result two different ways, your work is probably correct. If you do not get the same answer both ways, work and prove again.

Multiplication Practice

Do not copy. Place a folded paper under these examples. Multiply, and write the products on the folded sheet. Prove.

	1.	2.	3.	4.	5.	6.	7.	8.
(A)	31¢ <u>2</u>	10 <u>3</u>	\$.12 <u>2</u>	20 <u>3</u>	11¢ <u>3</u>	21 <u>3</u>	30 <u>3</u>	\$.22 <u>2</u>
(B)	10 <u>9</u>	32 <u>2</u>	24 <u>2</u>	\$.31 <u>3</u>	11 <u>6</u>	32¢ <u>3</u>	33 <u>3</u>	11 <u>8</u>
(C)	12 <u>3</u>	10¢ <u>2</u>	23 <u>3</u>	20 <u>2</u>	\$.34 <u>2</u>	13 <u>3</u>	10¢ <u>6</u>	21 <u>4</u>

General Practice 14

Write the answers on a sheet of paper. Time allowed: 12 minutes.

1.	2.	3.	4.
Subtract:	Multiply:	Add:	Divide:
658	43	490	
596	<u>2</u>	<u>386</u>	5) <u>45</u>
5.	6.	7.	8.
Add:	Multiply:	Subtract:	Divide:
458	31	712	35 ÷ 7 =
<u>284</u>	<u>2</u>	<u>437</u>	

208 Multiplying Three-Figure Numbers

9. In a bean bag game, Harry's scores were 1, 2, 7, 6, 2; Dick's, 4, 4, 7, 2, 6; James's, 3, 1, 6, 2, 7; Mary's, 3, 0, 9, 3, 6; and Daisy's, 4, 0, 8, 0, 6. What was the total score of each? Who won?

10. There are 20 people in a street car. One-fourth of them are men. How many men are there?

11. There were 17 big stones down by the brook. John and some other boys pushed 4 of them into the water. How many stones were left?

12. Robert bought some school supplies that cost 59 cents. He gave the storekeeper 75 cents to pay for them. How much change did George receive?

Multiplying Three-Figure Numbers



Aunt Sally bought two pairs of roller skates and gave one pair to each of her two nieces, Mary Louise and Betty Jane. Each pair cost \$3.10. What did the 2 pairs cost together?

310 Two 0's are how many?

2 Two 1's are how many?

Two 3's are how many?

What is 310×2 ? What is $\$3.10 \times 2$?

This problem is worked in the same way that you learned for multiplying numbers like 21×2 , 43×2 , and so on. The only new thing is that you have to work out three parts instead of two parts.

To multiply 310 by 2, think, "Two 0's

310 \$3.10 are 0." Write 0 under the 2.

2 2 Think, "Two 1's are 2." Write 2 under the 1.

Think, "Two 3's are 6." Write 6 under the 3.

Then, $310 \times 2 = 620$. And $\$3.10 \times 2 = \6.20 .

Multiply 432 by 2.

432 Two 2's are how many?

2 Two 3's are how many?

Two 4's are how many?

To multiply 432 by 2, think, "Two 2's are 4." Write 4 in the ones' column. Then think, "Two 3's are 6." Write 6 in the tens' column. Then think, "Two 4's are 8." Write 8 in the hundreds' column.

$432 = 4 \text{ hundreds} + 3 \text{ tens} + 2 \text{ ones} = 400 + 30 + 2$

$2 = \quad \quad \quad 2 = \quad \quad \quad 2$

$864 = 8 \text{ hundreds} + 6 \text{ tens} + 4 \text{ ones} = 800 + 60 + 4$

What is $211 + 211 + 211 + 211$?

What is 211×4 ? 211×2 ? 211×3 ?

Problems

1. I have \$111. My father has 6 times as many dollars as I have. How many dollars does my father

210 Problems and Multiplication Practice

have? My brother has 2 times as many dollars as I have. How many dollars does my brother have?

2. Mr. Smith is thinking of building a new home. He can get a lot out at the edge of town, where it is quiet, for \$410. But he is afraid one lot is too small for the kind of home he wants to build. If he can get the lot next to the one he is thinking of buying, he can build a fine large home. He finds that he can get this second lot, also, for \$410. If he buys both lots, how much money will Mr. Smith have to spend for the 2 lots?

3. Henry's uncle has \$100 in the bank, and Henry's father has 8 times as much money in the bank as Henry's uncle. How much money has Henry's father in the bank?

4. A builder receives \$432 for building one kind of garage. What will he receive for building 2 of these garages?

Multiplication Practice

Do not copy. Place a folded paper under these examples. Multiply, and write the products on the folded sheet. Prove.

	1.	2.	3.	4.	5.	6.	7.	8.
(A)	\$231 <u>2</u>	103 <u>2</u>	210 <u>4</u>	302 <u>2</u>	\$240 <u>2</u>	143 <u>2</u>	\$401 <u>2</u>	223 <u>3</u>
(B)	101 <u>4</u>	\$444 <u>2</u>	301 <u>3</u>	133 <u>3</u>	\$423 <u>2</u>	111 <u>8</u>	331 <u>3</u>	\$112 <u>3</u>
(C)	324 <u>2</u>	233 <u>3</u>	\$224 <u>2</u>	111 <u>7</u>	441 <u>2</u>	\$213 <u>2</u>	130 <u>2</u>	311 <u>2</u>

Addition Practice

Add, and write the sums on a strip of paper.

1.	2.	3.	4.	5.	6.	7.	8.	9.
2	7	1	5	0	4	2	0	1
4	1	1	0	2	0	3	7	2
7	2	8	6	7	8	5	6	7
1	4	1	2	4	0	7	0	6
8	5	9	5	9	6	4	8	3
<u>4</u>	<u>2</u>	<u>3</u>	<u>1</u>	<u>0</u>	<u>3</u>	<u>1</u>	<u>3</u>	<u>5</u>

Dividing Two-Figure Numbers



Tom had a fine large sled that would carry 4 children besides himself. There were 48 children on the hillside who wanted to ride down the hill on Tom's sled. Tom said, "I can take only 4 of you at one time, but if you will all wait your turn, I will give each of

you a ride down the hill.” How many trips did Tom have to make to give all of them a ride?

$\begin{array}{r} 12 \\ 4 \overline{)48} \end{array}$ To work this problem, think: “Since there were 48 children and since Tom could take only 4 at one time, it took as many trips as there are 4’s in 48. To find how many 4’s there are in 48, I must divide 48 by 4.”

To divide 48 by 4, think, “4 into 4, 1 time.” Write 1 above the 4. Then think, “4 into 8, 2 times.” Write 2 above the 8.

Then, $48 \div 4 = 12$. It took 12 trips to give each one of the children a ride.

Problems

1. Alice’s grandmother divided \$63 equally among her 3 grandchildren. How much did each one of the grandchildren receive?

2. One day Mr. Brown said to Frank, Arthur, and Dick, “Boys, I will give you all the change I have here in my hand if you will mow my lawn.” He had 96¢ all together. The three boys mowed the lawn and then divided the money equally. How much did each one get?

3. Tom’s father earned \$24 in 2 days. If he earned the same amount each day, how much did he earn in 1 day?

4. There are 4 pecks in a bushel. How many bushels are there in 84 pecks?

5. There are 24 hours in a day. How many hours are there in one-half of a day? In one-fourth of a day? In one-third of a day?

Division Practice

Do not copy. Place a folded paper above each row and write the quotients on the folded paper.

	1.	2.	3.	4.	5.
(A)	$2\overline{)22}$	$3\overline{)33}$	$2\overline{)28}$	$3\overline{)69}$	$2\overline{)46}$
(B)	$4\overline{)44}$	$2\overline{)24}$	$3\overline{)36}$	$2\overline{)42}$	$2\overline{)66}$
(C)	$2\overline{)48}$	$2\overline{)68}$	$2\overline{)26}$	$3\overline{)39}$	$2\overline{)44}$
(D)	$3\overline{)63}$	$2\overline{)62}$	$2\overline{)82}$	$2\overline{)64}$	$4\overline{)84}$
(E)	$2\overline{)88}$	$3\overline{)66}$	$2\overline{)84}$	$4\overline{)48}$	$2\overline{)86}$

Dividing Three-Figure Numbers

Divide 846 by 2.

To divide 846 by 2, think, "2 into 8, 4 times."

423 Write 4 over the 8. Think, "2 into 4, 2 times."
 $2\overline{)846}$ Write 2 over the 4. Think, "2 into 6, 3 times."

Write 3 over the 6.

Then, $846 \div 2 = 423$.

Problems

- Grace's uncle divided \$484 equally among his 4 children. How much did each child get?
- How many bushels are there in 844 pecks?
- Ruth's sister gives music lessons. She wishes to buy a new piano that will cost \$848. If she saves \$4

a day, how many days will it take her to save enough to buy the piano?

4. Tom's father has 3 horses of equal value. The 3 horses together are worth \$369. How many dollars is each horse worth?

5. George, Edward, and Frank went to the woods to gather nuts. All together they found 963 nuts. They divided the nuts among themselves equally. How many nuts did each boy get?

Division Practice

Do not copy. Write the quotients on a folded paper.

	1.	2.	3.	4.	5.
(A)	$3\overline{)636}$	$3\overline{)936}$	$2\overline{)868}$	$9\overline{)999}$	$3\overline{)393}$
(B)	$2\overline{)862}$	$4\overline{)844}$	$2\overline{)628}$	$8\overline{)888}$	$2\overline{)622}$
(C)	$6\overline{)666}$	$2\overline{)644}$	$3\overline{)933}$	$2\overline{)800}$	$2\overline{)684}$
(D)	$2\overline{)842}$	$7\overline{)777}$	$2\overline{)668}$	$3\overline{)639}$	$2\overline{)884}$
(E)	$4\overline{)488}$	$4\overline{)848}$	$2\overline{)846}$	$5\overline{)550}$	$3\overline{)369}$

Proving Division

After you have divided one number by another, you can multiply to find whether you divided right or not. See how the example at the top of page 215 is worked and proved.

Divide 84 by 2, and prove.

WORK	PROOF	If you divide 84 by 2, you get 42. Then, if you multiply 42 by 2, you get 84. To work the example, you divide. To prove your work, you multiply. It is very important that you learn how to prove all your work. If you do not prove it, you cannot be sure that your work is right.
Divide:	Multiply:	
	42	
42	2	
2) <u>84</u>	<u>84</u>	

General Practice 15

Write the answers on a sheet of paper. Time allowed: 12 minutes.

1.	2.	3.	4.
Multiply:	Divide:	Add:	Subtract:
143		37¢	800
2	2) <u>86</u>	18¢	495
<u> </u>		<u>26¢</u>	<u> </u>
5.	6.	7.	8.
Add:	Multiply:	Subtract:	Divide:
19	210	410	
9	<u>4</u>	<u>278</u>	3) <u>639</u>
18			
9			
<u>39</u>			

9. The cat scratched John 7 times on one hand and 2 times on the other hand. How many scratches did John get?

10. Grace had 16 pretty beads, but she lost 12 of them. How many beads did Grace have left?

11. There were 21 tables in a restaurant. Four people could sit at each table. If all the tables were filled, how many people were seated at the tables?

12. In a bean bag game, Harry's scores were 0, 4, 7, 1, 8; Dick's, 3, 3, 4, 1, 8; James's, 0, 0, 9, 2, 7; Mary's, 1, 6, 9, 0, 2; and Daisy's, 4, 3, 5, 1, 7. Find each total score. Who had the two highest scores?

Problems

In some of the following problems you add; in some of them you subtract; and in some of them you multiply. Remember, in solving problems, to:

1. See what the problem tells you.
2. See what the problem asks you to find.
3. Decide whether to add, subtract, or multiply to find the answer.
4. Add, subtract, or multiply as you decide.

1. Mary weighs 76 pounds. She should weigh 81 pounds if she were up to the standard for her age and height. How many pounds under weight is Mary?

2. In the third-grade room, there are 7 rows of desks with 5 desks in each row. How many desks are there in the room?

3. Helen's mother uses 5 pounds of sugar a week in cooking. How many pounds of sugar does she use in 9 weeks?

4. There are 475 pupils in the Emerson School, 331 pupils in the Lowell School, and 523 pupils in the Longfellow School. How many pupils are there in the three schools together?

5. Tom's father works 7 hours a day. How many hours does he work in 5 days?

6. Robert's father runs a filling station. One day Robert's father had 968 gallons of gasoline in a tank. He sold 845 gallons. How many gallons of gasoline were left in the tank?

7. Harry solved 6 problems, and George solved 7 other problems. How many problems did both of them solve?

8. On the first trial in an arithmetic test, Mary had 18 examples right. On the second trial she had 31 right. How many more examples did Mary get right on the second trial than on the first trial?

9. Kate has \$9, and Jane has 3 times as many dollars as Kate. How many dollars has Jane?

10. Jack is 49 inches tall, and Harry is 57 inches tall. How much taller is Harry than Jack?

Multiplication Practice

Multiply, and write the answers on a folded paper.

	1.	2.	3.	4.	5.	6.	7.
(A)	301 3 —	\$.31 2 —	143 2 —	231 2 —	\$34 2 —	101 4 —	32¢ 2 —
(B)	302 2 —	\$133 3 —	20 3 —	\$4.01 2 —	103 2 —	21¢ 4 —	444 2 —
(C)	423 2 —	\$2.40 2 —	324 2 —	32 3 —	\$2.23 3 —	210 4 —	30¢ 3 —

Telling Time in Quarter Hours



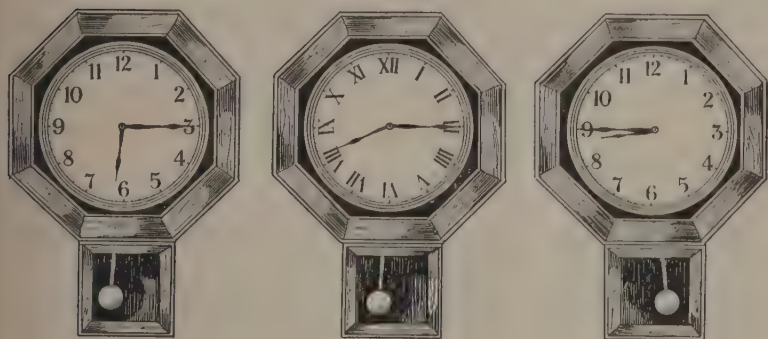
1. You have already learned how to tell time in hours and half hours. You know where the hands of a clock are when it is eight o'clock, when it is half past four o'clock, and so on. You will now learn how to tell time in quarter hours. A quarter is one-fourth.

2. When the minute hand points to III and the hour hand is one-fourth of the way between I and II, it is a quarter past one o'clock; or we may say it is 15 minutes past one o'clock, or 1:15, which is read "one fifteen."



3. When the minute hand points to 9 and the hour hand is between 1 and 2, it is a quarter to two o'clock; or we may say that it is 15 minutes to two o'clock, or 1:45, which is read "one forty-five."

4. What is the time on each of these clocks?



5. On your play clock, show where the hands are at a quarter past seven o'clock; 10:45 o'clock; a quarter to one; 5:15.

6. Where are the hands on the clock when it is a quarter past four? Where are the hands on the clock when it is 5:45? A quarter to twelve? 2:15?

7. Place the hands on your play clock to show that it is a quarter to five. Place the hands on your play clock to show that it is a quarter past nine; 2:45; 7:45.

8. Where are the hands when it is a quarter past eleven? Where are the hands when it is 6:45? A quarter to nine? 3:15? A quarter to four?

What Is Money?

Men do not all own the same amount of property, and men do not all own the same kinds of things. For example, men do not all own flour, sugar, eggs, milk,

and other things to eat. But all of us need flour, sugar, eggs, milk, and other foods to be healthy and strong. Because of this, it is necessary for some people to get food from other people. But if one person is to get flour, sugar, eggs, and milk that another person owns, the person receiving the food must give something in exchange for it.

"When a man gets food or other property from another man and gives something in exchange for it, a **trade** has been made. Suppose that a man had a sack of flour but had no shoes, and that another man had a pair of shoes but no flour. Then suppose that the man who had the shoes wanted some flour, and that the man who had the flour wanted some shoes. If the shoes and flour were of the same value, the men could exchange the shoes and the flour.

In the same way, other things of the same value could be exchanged, or traded. But most things are not of the same value, and think how hard it would be to carry around samples of various things of different values. Because of these facts, it is necessary for people to have something that can be exchanged for all other things. That something is called **money**. When a person gives money for something, the person who gives the money **buys** something, and the person who gives something for money **sells** something. For example, if you give five cents to a merchant for some soap, you **buy** some soap and he **sells** it. All of you have to buy many things, and some of you will become **merchants** and sell things. You see, now, how important it is to know about money and its use.

United States Money—Gold Coins

5 cents = 1 nickel	
10 cents = 1 dime	
25 cents = 1 quarter	
50 cents = 1 half dollar	
100 cents = 1 dollar	
<hr/>	
2 nickels = 1 dime	
5 nickels = 1 quarter	
10 nickels = 1 half dollar	
20 nickels = 1 dollar	
<hr/>	
5 dimes = 1 half dollar	
10 dimes = 1 dollar	
<hr/>	
2 quarters = 1 half dollar	
4 quarters = 1 dollar	
<hr/>	
2 half dollars = 1 dollar	
<hr/>	
$2\frac{1}{2}$ dollars = 1 quarter eagle	
5 dollars = 1 half eagle	
10 dollars = 1 eagle	
20 dollars = 1 double eagle	

There are two kinds of United States money. One kind is made of paper. You will learn about this kind later. The other kind of money is made of metal.

As you have learned, the different pieces of metal money are called coins. The names of the common coins are: cent, nickel, dime, quarter, half dollar, and dollar. These coins you already know.

Some coins are made of a mixture of gold, silver, and copper. But these coins are almost pure gold.

They are therefore called **gold coins**. The values of these coins are two and one-half, five, ten, and twenty dollars.

The two and one-half dollar gold piece is called a **quarter eagle**. The five-dollar gold piece is called a **half eagle**. The ten-dollar gold piece is called an **eagle**. The twenty-dollar gold piece is called a **double eagle**. Do we use many gold coins now?

The table on page 221 tells you many facts you need to know about United States coins. Most of these facts you should know already. If you do not, you ought to learn them now; and you should also learn the facts that are new to you.

United States Money — Bills

Besides metal money, we also have paper money. A piece of paper money is called a **bill**, and paper money in general is called **currency**. The names of the common pieces of paper money are: one-dollar bill, two-dollar bill, five-dollar bill, ten-dollar bill, and twenty-dollar bill; and there are bills worth even larger amounts. Here is a picture of a one-dollar bill:



The value of a dollar bill is 100 cents, or one dollar. We do not make paper money for values less than one dollar. Paper money is used more than any other kind of money. It is used in making payments in large amounts and in making change for large bills. Metal money, except gold coins, is used in paying small amounts and in making change for small amounts.

2 one-dollar bills = 1 two-dollar bill	
5 one-dollar bills = 1 five-dollar bill	
10 one-dollar bills = 1 ten-dollar bill	
20 one-dollar bills = 1 twenty-dollar bill	
<hr/>	
5 two-dollar bills = 1 ten-dollar bill	
10 two-dollar bills = 1 twenty-dollar bill	
<hr/>	
2 five-dollar bills = 1 ten-dollar bill	
4 five-dollar bills = 1 twenty-dollar bill	
<hr/>	
2 ten-dollar bills = 1 twenty-dollar bill	

It is important that you know the values of the different kinds of paper money, given in the table above. Business men use these facts every day.

1. How many nickels equal a two-dollar bill?
2. How many two-dollar bills equal a ten-dollar bill?
3. How many dimes equal a five-dollar bill?
4. How many half dollars equal a ten-dollar bill?
5. How many five-dollar bills equal a twenty-dollar bill?
6. How many quarters equal a two-dollar bill?

224 Subtraction and General Practice

Subtraction Practice

Subtract, and write the differences on a folded paper.

	1.	2.	3.	4.	5.	6.
(A)	681 4 <hr/>	991 780 <hr/>	505 151 <hr/>	26 4 <hr/>	813 689 <hr/>	498 436 <hr/>
(B)	195 138 <hr/>	201 8 <hr/>	997 479 <hr/>	780 687 <hr/>	35 10 <hr/>	646 475 <hr/>
(C)	184 113 <hr/>	359 275 <hr/>	700 113 <hr/>	966 597 <hr/>	518 509 <hr/>	60 21 <hr/>
(D)	72 64 <hr/>	780 714 <hr/>	824 458 <hr/>	881 659 <hr/>	969 486 <hr/>	702 694 <hr/>

General Practice 16

Write the answers on a sheet of paper. Time allowed: 12 minutes.

1.	2.	3.	4.
Add: 27¢ 9¢ 18¢ 29¢ <hr/>	Divide: 3) 69	Subtract: \$9.18 2.75 <hr/>	Multiply: \$3.10 2 <hr/>
5.	6.	7.	8.
Divide: 2) 846	Add: \$2.89 5.63 <hr/>	Multiply: 233 3 <hr/>	Subtract: 734 578 <hr/>

9. If an automobile goes 30 miles an hour, how many miles will it go in 4 hours at the same rate?

10. There are 68 pages in George's story book. He has read 25 pages. How many pages has he still to read?

11. If you have \$2 in one bank, \$6 in another bank, and \$4 in a third bank, how many dollars do you have in these banks all together?

12. Robert has 37 cents in his bank. If he takes out 15 cents, how much money will he have left in his bank?

Review

Here is a review of what you have been studying. Write the numbers 1 to 25 on a sheet of paper. After each number you have written, write the answer to the question that has the same number.

At the end of each question you will see a page number. If you missed any part of the test, turn back to the page number given after that part of the test, where you will find how to answer what you missed. Study what you missed until you are sure you know what to do. Then go back to the review and again try the part you missed. Do this until you do not miss anything or until your teacher tells you to work on something else.

1. What is a short way of writing 5 times 4 are 20?
(Page 160)

2. What is the answer in a multiplication example called? (Page 161)

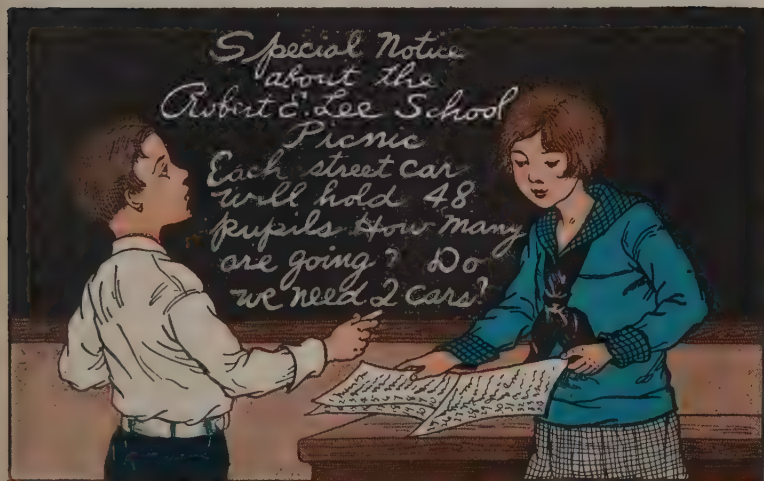
3. How many halves are there in anything?
(Page 174)

4. Is 5×3 the same as 3×5 ? (Page 166)
5. What kind of example is $4 \times 3 = 12$? (Page 161)
6. How many quarts of milk are there in 12 pints?
(Page 171)
7. What kind of example is $9 + 3$? (Page 161)
8. What does the sign \times mean? (Page 176)
9. How many quarts are there in a peck? (Page 181)
10. How many pecks are there in a bushel? (Page 182)
11. What kind of example is $3\overline{)9}$? (Page 179)
12. What part of a gallon is 1 quart? (Page 184)
13. What is the answer in a division example called?
(Page 180)
14. How many nickels are there in a half dollar?
(Page 221)
15. What does the sign \div mean? (Page 177)
16. How many inches are there in a foot? (Page 192)
17. How many five-dollar bills are equal to a ten-dollar bill? (Page 223)
18. How many feet are there in a yard? (Page 192)
19. If you want to find a third of 6, by what number will you divide 6? (Page 197)
20. How much is 0×1 ? (Page 201)
21. What is another name for paper money?
(Page 222)
22. Where are the hands of a clock when it is a quarter to 5? (Page 218)
23. How much is $0 \times$ any number? (Page 201)
24. How many fourths are there in a sheet of paper?
(Page 190)
25. What is the difference in value between 10 dimes and a dollar? (Page 221)

CHAPTER IX

CARRYING IN MULTIPLICATION, AND REMAINDERS IN DIVISION

Multiplying by 2, with Carrying



The third grade of the Robert E. Lee School planned to have a picnic in the park. They can get to the park on the street car. Each street car will carry 48 children. How many children will 2 street cars carry?

In working this problem, first think: "If 1 car will carry 48 children, 2 cars will carry 2 times 48 children. This is a multiplication problem. I must multiply 48 by 2."

In multiplying 48 by 2, you will have to "carry," just as you did in adding columns. And just as you did in adding columns, you must write the ones in the ones' column and carry the tens to the tens' column.

To multiply 48 by 2, think, "Two 8's are 16." Write the 6 in the ones' column under the 2. Carry 1 to the tens' column. Then think, "Two 4's are 8, and 1 are 9." Write 9 in the tens' column.

Then, $48 \times 2 = 96$; or $48 \text{ children} \times 2 = 96 \text{ children}$.

In multiplying 48 by 2, you noticed that you had 1 to carry. It often happens that you have 1 to carry when you multiply by 2. You must be on the lookout for these carrying numbers. Do not forget them.

Here is a list you need to know. Think the right answers for these examples. In example 1A, think, "2 times 3 are 6, and 1 are 7." Do the others in the same way.

1.	2.	3.
(A) $2 \times 3 + 1 = 7$	$2 \times 6 + 1 = 13$	$2 \times 1 + 1 = 3$
(B) $4 \times 2 + 1 = 9$	$2 \times 0 + 1 = __? __$	$2 \times 7 + 1 = __? __$
(C) $2 \times 2 + 1 = __? __$	$3 \times 2 + 1 = __? __$	$5 \times 2 + 1 = __? __$
(D) $2 \times 8 + 1 = __? __$	$7 \times 2 + 1 = __? __$	$2 \times 9 + 1 = __? __$
(E) $6 \times 2 + 1 = __? __$	$2 \times 4 + 1 = __? __$	$8 \times 2 + 1 = __? __$
(F) $2 \times 5 + 1 = __? __$	$9 \times 2 + 1 = __? __$	

Multiply 75 by 2.

75 Think, "Two 5's are 10." Write 0 in the
2 ones' column under the 2. Carry 1 to the tens'
 150 column.

Think, "Two 7's are 14, and 1 are 15." Write 15, with the 5 in the tens' column under the 7, and the 1 in the hundreds' column.

Then, $75 \times 2 = 150$.

Problems

1. George: How much is this candy, Mr. Smith?

Mr. Smith: That kind sells 2 for 1 cent.

George: All right. I'll take 5 cents' worth.

Mr. Smith: Fine. I'll put into this bag 2 pieces for each cent, and I'll put in 1 more piece for good measure.

George: Thank you, Mr. Smith.

How many pieces of candy did Mr. Smith put into the bag all together?

2. Many children in the country ride to school in big busses. One school needs 2 busses to bring its children to school. If each bus can carry 27 children, how many children can the 2 busses carry?

3. Charles's father is thinking of buying a pocket knife for each of his two boys. He can get a good knife for 75 cents. What will 2 knives like that cost Charles's father?

4. Tom planted 2 rows of potatoes and put 15 hills in each row. How many hills of potatoes did Tom plant all together?

5. Kate bought 2 story books at 39¢ each. What did they cost all together?

6. Grace's mother can bake 18 small cakes in 1 pan. If she can bake 2 panfuls in her oven at the same time, how many little cakes can she bake at the same time?

230 Multiplication and Addition Practice

Multiplication Practice

Do not copy. Multiply, and write the products on a folded paper.

	1.	2.	3.	4.	5.	6.	7.	8.
(A)	27	52	12	69	22	48	12	56
	<u>2</u>	<u>5</u>	<u>7</u>	<u>2</u>	<u>6</u>	<u>2</u>	<u>5</u>	<u>2</u>
(B)	42	78	62	67	79	97	86	12
	<u>9</u>	<u>2</u>	<u>5</u>	<u>2</u>	<u>2</u>	<u>2</u>	<u>2</u>	<u>8</u>
(C)	25	36	32	59	82	37	42	96
	<u>2</u>	<u>2</u>	<u>8</u>	<u>2</u>	<u>5</u>	<u>2</u>	<u>8</u>	<u>2</u>

Addition Practice

Do not copy. Place a folded paper under these examples. Add, and write the sums on the folded sheet.

	1.	2.	3.	4.	5.
(A)	310	414	520	315	210
	426	250	125	340	131
	<u>395</u>	<u>835</u>	<u>869</u>	<u>574</u>	<u>768</u>
(B)	316	410	508	410	300
	240	107	220	210	108
	<u>986</u>	<u>774</u>	<u>576</u>	<u>689</u>	<u>597</u>
(C)	710	212	120	207	210
	163	553	602	470	314
	<u>419</u>	<u>938</u>	<u>269</u>	<u>927</u>	<u>488</u>

Multiplying by 3, 4, and 5, with Carrying

You have already learned that, when you multiply by 2, there is often 1 to carry. When you multiply by 3, you may have 1 or 2 to carry. When you multiply by 4, you may have 1, 2, or 3 to carry. And when you multiply by 5, you may have 1, 2, 3, or 4 to carry.

Are these multiplied right?

Carry 1.

	1.	2.	3.	4.
(A)	$\begin{array}{r} 35 \\ 2 \\ \hline 70 \end{array}$	$\begin{array}{r} 47 \\ 2 \\ \hline 94 \end{array}$	$\begin{array}{r} 76 \\ 2 \\ \hline 152 \end{array}$	$\begin{array}{r} 59 \\ 2 \\ \hline 118 \end{array}$
(B)	$\begin{array}{r} 68 \\ 2 \\ \hline 136 \end{array}$	$\begin{array}{r} 24 \\ 3 \\ \hline 72 \end{array}$	$\begin{array}{r} 46 \\ 3 \\ \hline 138 \end{array}$	$\begin{array}{r} 35 \\ 3 \\ \hline 105 \end{array}$
(C)	$\begin{array}{r} 23 \\ 4 \\ \hline 92 \end{array}$	$\begin{array}{r} 74 \\ 4 \\ \hline 296 \end{array}$	$\begin{array}{r} 13 \\ 5 \\ \hline 65 \end{array}$	$\begin{array}{r} 82 \\ 5 \\ \hline 410 \end{array}$

Carry 2.

(D)	$\begin{array}{r} 27 \\ 3 \\ \hline 81 \end{array}$	$\begin{array}{r} 69 \\ 3 \\ \hline 207 \end{array}$	$\begin{array}{r} 98 \\ 3 \\ \hline 294 \end{array}$	$\begin{array}{r} 15 \\ 4 \\ \hline 60 \end{array}$
(E)	$\begin{array}{r} 77 \\ 4 \\ \hline 308 \end{array}$	$\begin{array}{r} 26 \\ 4 \\ \hline 104 \end{array}$	$\begin{array}{r} 15 \\ 5 \\ \hline 75 \end{array}$	$\begin{array}{r} 64 \\ 5 \\ \hline 320 \end{array}$

Carry 3.

(F)	$\begin{array}{r} 19 \\ 4 \\ \hline 76 \end{array}$	$\begin{array}{r} 39 \\ 4 \\ \hline 156 \end{array}$	$\begin{array}{r} 17 \\ 5 \\ \hline 85 \end{array}$	$\begin{array}{r} 47 \\ 5 \\ \hline 235 \end{array}$
-----	---	--	---	--

Carry 4.

	1.	2.	3.	4.
(G)	19	59	39	79
	<u>5</u>	<u>5</u>	<u>5</u>	<u>5</u>
	95	295	195	395

Practice in Multiplying by 3, 4, and 5, with Carrying

6	3	1	5	8	0	4	9	2	7
---	---	---	---	---	---	---	---	---	---

1. Multiply each of the numbers from 0 to 9, in the order given above, by 2 and add 1 to each product. Think, "Two 6's are 12, and 1 are 13; two 3's are 6, and 1 are 7," and so on.

2. Multiply each of the numbers from 0 to 9 by 3 and add 1 to each product. Think, "Three 6's are 18, and 1 are 19; three 3's are 9, and 1 are 10," and so on.

3. Multiply each of the numbers from 0 to 9 by 3, and add 2 to each product. Think, "Three 6's are 18, and 2 are 20; three 3's are 9, and 2 are 11," and so on.

4. Multiply each of the numbers given above by 4 and add 1 to each product.

5. Multiply each of the numbers given above by 4 and add 2 to each product.

6. Multiply each of the numbers given above by 4 and add 3 to each product.

7. Multiply each of the numbers from 0 to 9 by 5 and add 1.

8. Multiply each of the numbers from 0 to 9 by 5 and add 2.

9. Multiply each of the numbers from 0 to 9 by 5 and add 3.

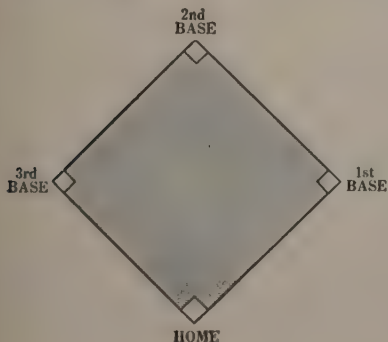
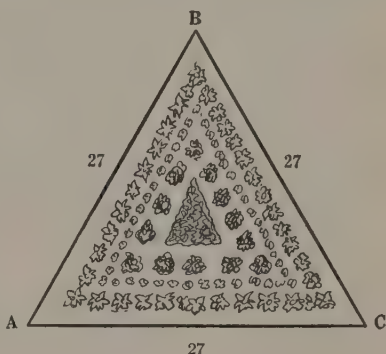
10. Multiply each of the numbers from 0 to 9 by 5 and add 4.

Problems

1. A flower bed with three equal sides is 27 feet on a side. If you were to walk from corner A to corner B, and then from corner B to corner C, how far would you walk all together?

2. If you were to walk from A all the way around the flower bed to A again, how far would you walk?

3. On a small baseball diamond, it is 65 feet from the home plate to first base, 65 feet from first base to second base, and so on. If you were to hit a two-bagger, how far would you have to run from the home plate to the second base?



4. If you hit a home run, how far would you have to run?

5. If you hit a three-bagger, how far would you have to run?

6. Suppose you struck out. How far would you have to run?

General Practice 17

Write the answers on a sheet of paper. Time allowed: 12 minutes.

1.	2.	3.	4.
Subtract:	Multiply:	Add:	Divide:
506	45	275	
<u>354</u>	<u>4</u>	<u>637</u>	<u>3\overline{96}</u>
5.	6.	7.	8.
Multiply:	Add:	Divide:	Subtract:
\$79	17		\$802
<u>5</u>	9	<u>2\overline{684}</u>	<u>587</u>
	29		
	18		
	<u>19</u>		

9. William has \$8, and Thomas has \$3 less than William. How many dollars has Thomas?

10. Harry's scores in a bean bag game were 1, 0, 9, 3, 6; Dick's, 1, 1, 8, 0, 9; James's, 4, 1, 7, 4, 5; Mary's, 0, 3, 6, 5, 6; and Daisy's, 0, 6, 9, 0, 5. What was each total score? Who won the game?

11. Richard had a garden. He made \$3 selling potatoes, \$5 selling corn, and \$8 selling onions. How much did he make in all?

12. Fred sells *Saturday Evening Posts* at 5¢ each. Yesterday, after school, Fred took in 45¢ from the sale of *Posts*. How many *Posts* did he sell?

Multiplying Three-Figure Numbers, with Carrying in the Ones' Column



1. Robert and his brother Charles belong to the Boy Scouts. One day their mother went down town to buy them some things that they will need when they go camping. First, she bought each of them 2 Boy Scout suits at \$1.35 each. How much did the 2 suits for Robert cost? How much did Charles's 2 suits cost?

\$1.35 To multiply \$1.35 by 2, think, "Two 5's are
 2 10." Write 0; carry 1.
 \$2.70 Think, "Two 3's are 6, and 1 are 7." Write 7.
 Think, "Two 1's are 2." Write 2.

Then you must put the decimal point between the 2 and the 7 to show which part of the product is dollars

and which is cents, and you must put a dollar sign to the left of the 2. The suits for each boy cost \$2.70.

2. Then Robert and Charles's mother bought 2 axes at 85¢ each. How much did they cost together?

3. Then she bought 2 sets of first-aid supplies at \$1.45 a set. How much did they cost?

4. Next she bought each of them 2 woolen blankets at \$4.25 each. How much did the 2 blankets cost? How much did all 4 blankets cost?

5. How much did Robert and Charles's mother spend all together for the things she bought?

Multiplication Practice

Do not copy. Write the products on a folded paper. In the first example, think, "Nine 2's are 18." Write 8; carry 1. Think, "Nine 0's are 0, and 1 is 1." Write 1. Think, "Nine 3's are 27." Write 27. Then, the product for the first example is 2718. Do the others in the same way.

	1.	2.	3.	4.	5.	6.	7.	8.
(A)	302	405	403	748	504	312	505	213
	<u>9</u>	<u>8</u>	<u>9</u>	<u>2</u>	<u>9</u>	<u>7</u>	<u>9</u>	<u>7</u>
(B)	204	849	302	729	503	819	405	809
	<u>8</u>	<u>2</u>	<u>8</u>	<u>3</u>	<u>8</u>	<u>4</u>	<u>7</u>	<u>5</u>
(C)	314	708	817	718	937	928	907	907
	<u>7</u>	<u>4</u>	<u>3</u>	<u>5</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>

Multiplying Three-Figure Numbers, with Carrying in the Tens' Column



Rose: Oh, Mother, I wish you would make me a dress out of this cloth. It is so pretty.

Mrs. West: How much is this a yard, Mr. White?

Mr. White: It is \$2.70 a yard, Mrs. West.

Mrs. West: Well, I'll take two yards. Rose, you may find out how much it will cost.

Rose: All right, Mother. Give me a pencil and a piece of paper, and I'll work it out. We learned how to do this in school the other day.

Two 0's are 0; so I'll write 0 in the answer
 \$2.70 under the 2. Two 7's are 14. I will write 4
 2 and carry 1. Two 2's are 4, and 1 are 5. I
\$5.40 will write 5.

Now I must put the decimal point between the 5 and the 4 to show which part is dollars and which

part is cents, and I must put a dollar sign to the left of the 5. The two yards will cost you \$5.40, Mother.

Mr. White: That is exactly right, Rose. You did not make a single mistake.

Do you think you can work some problems like the one Rose did? In the next lesson there are some for you to try.

Problems

1. George's father can buy 2 horses for \$152 each. What will the 2 horses cost?

2. Kate's brother earns \$150 a month. How much does he earn in 2 months?

3. Mr. Brown bought three Shetland ponies for his three little girls to ride. Each pony, with a saddle and everything ready to ride, cost \$142. What did the 3 ponies with outfits cost all together?



4. Mr. Smith bought three Boy Scout suits for his three boys. Each suit cost \$2.50. What did the 3 suits cost?

Multiplying Three-Figure Numbers, with Carrying in the Tens' Column, Four-Figure Products

Multiply 462 by 3.

Three 2's are how many? What do you write?
 462 Three 6's are how many? What do you write?
 3 What do you carry?
 — Three 4's are how many? And 1 more are how many? What do you write?

What is 462×3 ?

To multiply 462 by 3, think, "Three 2's are 6."
 462 Write 6 in the ones' column.
 3 Think, "Three 6's are 18." Write 8 in the
 1386 tens' column. Carry 1 to the hundreds' column.

Then think, "Three 4's are 12, and 1 are 13."
 Write 13 in the answer, with the 3 in the hundreds' column and the 1 to the left of it.

Then, $462 \times 3 = 1386$.

Multiplication Practice

Do not copy. Write the products on a folded paper.

	1.	2.	3.	4.	5.	6.	7.	8.
(A)	151	562	450	232	761	284	690	372
	<u>4</u>	<u>2</u>	<u>2</u>	<u>4</u>	<u>2</u>	<u>2</u>	<u>2</u>	<u>2</u>
(B)	521	420	543	171	952	920	861	831
	<u>9</u>	<u>8</u>	<u>3</u>	<u>2</u>	<u>3</u>	<u>5</u>	<u>3</u>	<u>5</u>

	1.	2.	3.	4.	5.	6.	7.	8.
(C)	894	431	740	921	982	521	530	521
	<u>2</u>	<u>4</u>	<u>3</u>	<u>5</u>	<u>2</u>	<u>7</u>	<u>6</u>	<u>8</u>
(D)	420	563	651	540	342	893	731	420
	<u>9</u>	<u>3</u>	<u>3</u>	<u>4</u>	<u>4</u>	<u>2</u>	<u>5</u>	<u>7</u>

General Practice 18

Write the answers on a sheet of paper. Time allowed: 12 minutes.

1.	2.	3.	4.
Add:	Divide:	Subtract:	Multiply:
247		960	\$893
<u>374</u>	4) <u>488</u>	<u>451</u>	<u>2</u>
5.	6.	7.	8.
Divide:	Add:	Multiply:	Subtract:
	\$289	403	\$943
3) <u>63</u>	<u>563</u>	<u>8</u>	<u>354</u>

9. Jack is saving his money to buy a pair of skates which will cost \$4.25. Jack has \$2.10 in his bank. How much more money does he need to buy the skates?

10. After Ruth had paid \$1.25 for a doll for her sister's birthday, she had \$1.42 left. How much did she have before she bought the doll?

11. Last week-end Mary and her father and mother took an automobile trip. Mary's father drove at the

rate of 30 miles an hour. It took them 9 hours to reach the place where they visited. How far away was it?

12. Helen had a string of beads with 87 beads on it. One day the string broke, and Helen could find only 75 beads. How many beads were lost?

Carrying Twice in Multiplying



Mrs. Brown took her two little girls down town to buy a pair of new shoes for each of them. She can get a good pair for \$4.75. What will 2 pairs cost?

\$4.75 Two 5's are how many? What do you
2 write? What do you carry?

— Two 7's are how many? And 1? What do
you write? What do you carry?

Two 4's are how many? And 1? What do you
write? $\$4.75 \times 2 = ______$.

To multiply \$4.75 by 2, think, "Two 5's are \$4.75 10." Write 0; carry 1. Think, "Two 7's are 2 14, and 1 are 15." Write 5; carry 1. Think, \$9.50 "Two 4's are 8, and 1 are 9." Write 9.

Put the decimal point and the dollar sign where they belong.

Then, $\$4.75 \times 2 = \9.50 .

Multiply 384 by 3.

To multiply 384 by 3, think, "Three 4's are 12." Write 2; carry 1. Think, "Three 8's are 24, 384 and 1 are 25." Write 5; carry 2. Think, "Three 3 3's are 9, and 2 are 11." Write 11.
1152 Then, $384 \times 3 = 1152$.

Problems

1. Mary says that there are 365 days in a year. Harry wants to know how many days there are in 2 years. How many are there?

2. Tom wants to know how many days there are in 3 years. How many are there?

3. Grace can get a pair of gloves for \$1.85. Since they are so cheap, she is thinking of buying 2 pairs. If she does buy 2 pairs of these gloves, what will they cost?

4. Rob has three brothers. How much money will it take to buy shoes for all 4 boys if each pair costs \$4.75?

5. Mr. White bought 4 new inner tubes for his automobile tires at \$3.95 each. What did they cost all together?

Different Kinds of Multiplication Examples

There are some kinds of examples in multiplication that may give you trouble if you are not careful. They really are not any different from the ones you have been working, but you need to look out for them. Here are some examples already worked out, to show you how they should be done. Study them, work them yourself on scrap paper, and ask your teacher to help you on any that bother you.

32¢ Think, "Two 2's are 4." Write 4.

2 Think, "Two 3's are 6." Write 6.

64¢ Put the cent sign (¢) where it belongs.

87¢ Think, "Two 7's are 14." Write 4; carry 1.

2 Think, "Two 8's are 16, and 1 are 17."

174¢ Write 17.

Put the cent sign (¢) where it belongs.

The multiplication is exactly like that in the example you have just done. But remember

\$.87 to put the decimal point (.) and the dollar

2 sign (\$) where they belong.

\$1.74

507 Think, "Five 7's are 35." Write 5; carry 3.

5 Think, "Five 0's are 0, and 3 are 3." Write 3.

2535 Think, "Five 5's are 25." Write 25.

268 Think, "Three 8's are 24." Write 4; carry 2.

3 Think, "Three 6's are 18, and 2 are 20."

804 Write 0; carry 2.

Think, "Three 2's are 6, and 2 are 8." Write 8.

375 Think, "Four 5's are 20." Write 0; carry 2.
 4 Think, "Four 7's are 28, and 2 are 30."
1500 Write 0; carry 3.
 Think, "Four 3's are 12, and 3 are 15." Write
 15.

Multiplication Practice

Do not copy. Place a folded paper under these examples. Multiply, and write the products on the folded sheet. Prove every other example.

	1.	2.	3.	4.	5.	6.
(A)	287 <u>3</u>	876 <u>2</u>	\$177 <u>3</u>	506 <u>3</u>	301 <u>2</u>	338 <u>3</u>
(B)	841 <u>3</u>	\$147 <u>3</u>	509 <u>2</u>	583 <u>3</u>	682 <u>2</u>	654 <u>3</u>
(C)	608 <u>3</u>	597 <u>2</u>	745 <u>3</u>	802 <u>3</u>	\$267 <u>3</u>	152 <u>2</u>
(D)	144 <u>5</u>	\$283 <u>4</u>	53 <u>5</u>	34 <u>5</u>	\$451 <u>4</u>	\$.51 <u>5</u>
(E)	122 <u>5</u>	653 <u>4</u>	264 <u>4</u>	620 <u>4</u>	142 <u>5</u>	236 <u>4</u>

Finding Remainders in Dividing

Kate has some candy which she wishes to give to Rose, Violet, and May.

Kate: Girls, I have 7 pieces of candy here which I wish to divide among you three girls. Let me see, now; how many pieces can I give to each one of you?



Rose: I know, Kate. There are 3 of us; you can give each one of us 2 pieces and you will have 1 piece left over.

Kate: That is right. I will give each of you 2 pieces, and I will keep 1 piece for myself. That was not such a hard problem after all, was it?

Violet: No, that was not hard. All you have to do is to think how many 3's there are in 7 and how much is left over.

Kate: If I had 13 pieces of candy to give to four girls and I gave each the same amount, May, do you know how much I could give to each?

May: Yes, you could give each 3 pieces and have 1 piece left over.

Kate: That is right. We learned that at school the other day, and we learned how to divide other numbers, too. It is interesting to learn what you can do with numbers. We use them every day in many different ways.

Did you know the answers to Kate's problems? See if you can give the answers to the following examples. What is left over in dividing is called the **remainder**. In the first example, think, "2 into 7, 3 times." Then think, " $3 \times 2 = 6$; 6 from 7 = 1." Then, 2 into 7, 3 times, with a remainder of 1. Do the others in the same way.

	1.	2.	3.	4.	5.
(A)	$2\overline{)7}$	$2\overline{)13}$	$3\overline{)1}$	$3\overline{)19}$	$2\overline{)19}$
(B)	$2\overline{)11}$	$2\overline{)1}$	$3\overline{)7}$	$2\overline{)9}$	$3\overline{)13}$
(C)	$2\overline{)3}$	$2\overline{)15}$	$6\overline{)1}$	$3\overline{)10}$	$8\overline{)41}$
(D)	$3\overline{)4}$	$2\overline{)5}$	$3\overline{)16}$	$4\overline{)13}$	$2\overline{)17}$

Practice in Finding Remainders

Write the answers for these on a folded paper. In the first example, write "5, R. 1," meaning 5 into 26, 5 times, and 1 remainder. Use "R." for "remainder." Do the other examples in the same way.

	1.	2.	3.	4.	5.
(A)	$5\overline{)26}$	$3\overline{)22}$	$7\overline{)15}$	$6\overline{)7}$	$8\overline{)25}$
(B)	$4\overline{)5}$	$8\overline{)9}$	$4\overline{)17}$	$5\overline{)16}$	$4\overline{)37}$
(C)	$5\overline{)21}$	$3\overline{)25}$	$4\overline{)9}$	$8\overline{)17}$	$8\overline{)1}$
(D)	$9\overline{)28}$	$2\overline{)1}$	$4\overline{)21}$	$9\overline{)10}$	$4\overline{)33}$
(E)	$5\overline{)36}$	$7\overline{)29}$	$5\overline{)11}$	$3\overline{)28}$	$9\overline{)19}$

More Practice in Finding Remainders

Think the right answers for these:

1. 6 into 19, $\underline{\quad}^? \underline{\quad}$ times, and $\underline{\quad}^? \underline{\quad}$ remainder
2. 4 into 5, $\underline{\quad}^? \underline{\quad}$ time, and $\underline{\quad}^? \underline{\quad}$ remainder
3. 5 into 1, $\underline{\quad}^? \underline{\quad}$ time, and $\underline{\quad}^? \underline{\quad}$ remainder
4. 4 into 25, $\underline{\quad}^? \underline{\quad}$ times, and $\underline{\quad}^? \underline{\quad}$ remainder
5. 7 into 8, $\underline{\quad}^? \underline{\quad}$ time, and $\underline{\quad}^? \underline{\quad}$ remainder
6. 5 into 31, $\underline{\quad}^? \underline{\quad}$ times, and $\underline{\quad}^? \underline{\quad}$ remainder
7. 6 into 25, $\underline{\quad}^? \underline{\quad}$ times, and $\underline{\quad}^? \underline{\quad}$ remainder
8. 5 into 46, $\underline{\quad}^? \underline{\quad}$ times, and $\underline{\quad}^? \underline{\quad}$ remainder
9. 9 into 10, $\underline{\quad}^? \underline{\quad}$ time, and $\underline{\quad}^? \underline{\quad}$ remainder
10. $13 \div 6 = \underline{\quad}^? \underline{\quad}$, and $\underline{\quad}^? \underline{\quad}$ remainder
11. $33 \div 8 = \underline{\quad}^? \underline{\quad}$, and $\underline{\quad}^? \underline{\quad}$ remainder
12. $22 \div 7 = \underline{\quad}^? \underline{\quad}$, and $\underline{\quad}^? \underline{\quad}$ remainder
13. $46 \div 9 = \underline{\quad}^? \underline{\quad}$, and $\underline{\quad}^? \underline{\quad}$ remainder
14. $31 \div 6 = \underline{\quad}^? \underline{\quad}$, and $\underline{\quad}^? \underline{\quad}$ remainder
15. $6 \div 5 = \underline{\quad}^? \underline{\quad}$, and $\underline{\quad}^? \underline{\quad}$ remainder
16. $29 \div 4 = \underline{\quad}^? \underline{\quad}$, and $\underline{\quad}^? \underline{\quad}$ remainder
17. $41 \div 5 = \underline{\quad}^? \underline{\quad}$, and $\underline{\quad}^? \underline{\quad}$ remainder
18. $37 \div 9 = \underline{\quad}^? \underline{\quad}$, and $\underline{\quad}^? \underline{\quad}$ remainder
19. $36 \div 7 = \underline{\quad}^? \underline{\quad}$, and $\underline{\quad}^? \underline{\quad}$ remainder

Problems

1. Mr. Williams sells milk. He puts it up in pint and quart bottles. How many quart bottles can Mr. Williams fill with 19 pints of milk, and how much will be remaining?

2. Mary wants to have a little party. She has 17 peaches. If she gives 2 peaches to each girl, to how many girls can she give peaches, and how many will she have remaining?

3. Robert divided 10 apples among 3 of his friends, giving the same number of apples to each

boy and keeping the remainder for himself. How many apples did Robert give to each of his friends? How many apples did he keep for himself?

4. May likes to color pictures. She has 25 cents which her mother told her she might spend for some paints. She can get a small pan of each color for 4 cents. How many different colors can she buy? How much money will she have remaining?

5. Alice's mother spends \$1.46 each week for butter. How much will she spend for butter in 5 weeks?

6. In a grocery store there are 48 pounds of flour in boxes. There are 3 pounds in each box. How many boxes are there?

7. There are 6 spoons in a set of spoons. How many spoons are there in 3 sets? In 2 sets? In 4 sets?

8. There are 3 feet in 1 yard. How many yards are there in 24 feet? In 9 feet? In 21 feet? In 12 feet? How many yards, and how many feet remaining, are there in 16 feet? In 22 feet? In 10 feet?

9. Ruth said, "I raised 28 bunches of sweet peas in my garden and I gave away one-fourth of them." How many bunches did Ruth give away?

10. There are 24 hours in a day. The number of hours that Will's father works each day equals one-third of a day. How many hours a day does Will's father work?

11. How many tires are needed for 2 automobiles if no spare tires are carried? For 6 automobiles? For 3 automobiles? For 5 automobiles?

12. If a train runs 36 miles an hour and a boat goes one-fourth as fast as the train, how many miles does the boat go in an hour?

13. Grace's father can get some building lots out near the park for \$425 each. How much will 2 of the lots cost together?

14. If Grace's father buys 3 lots at \$425 each, how much will they cost all together?

General Practice 19

Write the answers on a sheet of paper. Time allowed: 12 minutes.

1.	2.	3.	4.
Subtract:	Divide:	Add:	Multiply:
$\begin{array}{r} 82 \\ 27 \\ \hline \end{array}$	$\begin{array}{r} 2 \overline{)622} \end{array}$	$\begin{array}{r} \$3.98 \\ 2.96 \\ \hline \end{array}$	$\begin{array}{r} 223 \\ 3 \\ \hline \end{array}$
5.	6.	7.	8.
Divide:	Add:	Multiply:	Subtract:
$\begin{array}{r} 4 \overline{)484} \end{array}$	$\begin{array}{r} \$19 \\ .09 \\ .28 \\ .08 \\ .09 \\ \hline \end{array}$	$\begin{array}{r} \$432 \\ 2 \\ \hline \end{array}$	$\begin{array}{r} \$2.09 \\ 1.47 \\ \hline \end{array}$

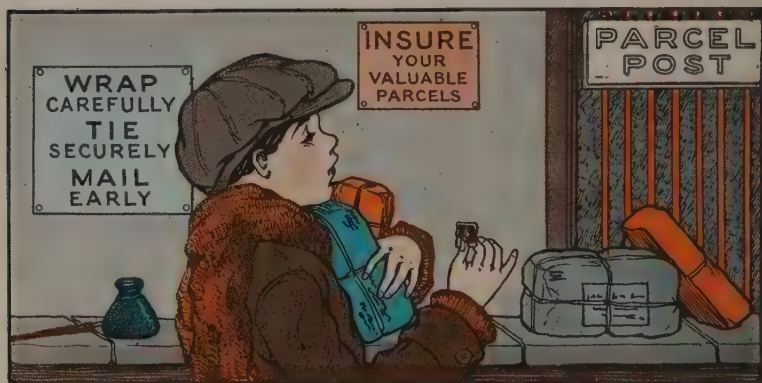
9. At a toy store you can buy 3 marbles for 1¢. Jack spent 15¢ for marbles. How many marbles did he get?

10. The third grade, which has 32 children in it, planned to have a picnic in the park. They planned to have 4 sandwiches each. How many sandwiches did they need to take?

11. Pretend that you have 36¢ to spend for bananas. If one banana costs 3¢, how many can you buy for 36¢?

12. Henry sorted his marbles to see how many of each color he had. He found that he had 15 red ones, 27 blue ones, and 34 green ones. Then he put them all together into a bag. How many marbles did Henry have in the bag?

Using 2 in Dividing, with Remainders



James is buying some stamps at the post office. How many two-cent stamps can he get for 25¢, and how many cents will he have remaining?

In working this problem, first think, "If 2¢ will buy 1 stamp, 25¢ will buy as many stamps as there are 2's in 25. This is a division problem. I must divide 25 by 2."

Here is an easy way to divide 25 by 2. Think, "2 into 12, R. 1 into 2, 1 time." Write 1 in the quotient above the 2.

Think, "2 into 5, 2 times." Write 2 in the quotient above the 5. Think, " $2 \times 2 = 4$; 4 from 5 = 1." Write 1 as the remainder.

Then, James can get 12 two-cent stamps, and he will have 1 cent remaining.

Suppose James had 34¢ to spend for two-cent stamps. How many could he get?

2 into 3, how many times? How much over?

$2 \overline{)34}$ 2 into 14, how many times?

$34 \div 2 = __? __.$

17 In dividing 34 by 2, think, "2 into 3, 1 time, and 1 over." Write 1 in the quotient over the 3, and carry 1. Think, "2 into 14, 7 times."

Write 7 in the quotient over the 4.

Then, James could get 17 two-cent stamps.

Perhaps you would like to know why we carry 1 from the tens' column to the ones' column. Here is the reason: 34 cents = 3 dimes and 4 cents, or 2 dimes and 14 cents. If you divide 2 dimes and 14 cents by 2, you get 1 dime and 7 cents, or 17 cents.

1 dime + 7 cents

$2 \overline{)34 \text{ cents}} = 2 \overline{)3 \text{ dimes} + 4 \text{ cents}} = 2 \overline{)2 \text{ dimes} + 14 \text{ cents}}$

Now suppose James had 75¢ to spend for two-cent stamps. How many could he get, and how many cents would he have remaining?

To divide 75 by 2, think, "2 into 7, 3 times." Write 3 in the quotient over the 7.

37, R. 1 Think, " $3 \times 2 = 6$; 6 from 7 = 1." $2 \overline{)75}$ Carry 1.

Think, "2 into 15, 7 times." Write 7 in the quotient over the 5. Think, " $7 \times 2 = 14$; 14 from 15 = 1." Write 1 as the remainder.

Then, $75 \div 2 = 37$, and 1 remainder.

That is, for 75¢ James could get 37 two-cent stamps and have 1 cent remaining.

Facts You Should Know in Dividing by 2, with Remainders

Here is a list of all the numbers up to 19 which have remainders when divided by 2. You should learn each one of these, for they will help you very much when you get farther along in division.

Think the right answers for these:

1. 2 into 5, $_\?_\$ times, and $_\?_\$ remainder
2. 2 into 9, $_\?_\$ times, and $_\?_\$ remainder
3. 2 into 1, $_\?_\$ time, and $_\?_\$ remainder
4. 2 into 13, $_\?_\$ times, and $_\?_\$ remainder
5. 2 into 17, $_\?_\$ times, and $_\?_\$ remainder
6. 2 into 3, $_\?_\$ time, and $_\?_\$ remainder
7. 2 into 7, $_\?_\$ times, and $_\?_\$ remainder
8. 2 into 19, $_\?_\$ times, and $_\?_\$ remainder
9. 2 into 11, $_\?_\$ times, and $_\?_\$ remainder
10. 2 into 15, $_\?_\$ times, and $_\?_\$ remainder

Problems

1. Henry spent 76¢ for some marbles at a toy store. He paid 2¢ for each marble. How many marbles did Henry buy?

2. How many 2-cent stamps can Louise get for 19¢, and how many cents will she have remaining?

3. Jane bought as many picture post cards as she could for 35¢. They cost 2¢ each. How many post cards did she buy, and how much change did she get?

4. How many quarts are there in 17 pints, and how much remaining? In 15 pints? In 11 pints? In 13 pints?

5. One year a farmer got \$96 for some ducks when he sold them. If he sold them for \$2 each, how many ducks did he sell?

Division Practice

Do not copy. Place a sheet of paper above these examples, divide, and write the answers on the paper. Fold the paper after working each row. In the first example, think, "2 into 8, 4 times." Write 4 above the 8. Then think, "2 into 7, 3 times." Write 3 above the 7. Then think, " $3 \times 2 = 6$; 6 from 7 = 1." Write R. 1. If there is no remainder, write nothing but the quotient.

	1.	2.	3.	4.	5.
	43, R. 1				
(A)	$2\overline{)87}$	$2\overline{)65}$	$2\overline{)21}$	$2\overline{)43}$	$2\overline{)89}$
(B)	$2\overline{)34}$	$2\overline{)72}$	$2\overline{)56}$	$2\overline{)93}$	$2\overline{)81}$
(C)	$2\overline{)73}$	$2\overline{)15}$	$2\overline{)97}$	$2\overline{)31}$	$2\overline{)59}$

Using 0 and 1 in Dividing

If your teacher had a small paper bag with no candy in it at all and she gave you one-half of the candy in the bag, how much candy would you get? What is one-half of zero? What is $0 \div 2$?

If your teacher gave you one-third of the candy, how much candy would you get? What is one-third of zero? What is $0 \div 3$?

From this, do you see that $0 \div 2 = 0$, and that $0 \div 3 = 0$, also? Zero divided by any number equals zero.

$$0 \div \text{any number} = 0$$

How many 1's are there in 2? How many 1's are there in 5? In 9?

Do you see that $2 \div 1 = 2$, $5 \div 1 = 5$, and $9 \div 1 = 9$?

Any number divided by 1 equals the number itself.

$$\text{Any number} \div 1 = \text{the number}$$

Divide 40 by 2.

Think, "2 into 4, 2 times." Write 2 over the 4.
 $2 \overline{)40}$ Think, "2 into 0, 0 time." Write 0 over the 0.

Division Practice

Do not copy. Write the quotients on a folded paper placed above each row. The first example is worked for you.

	1.	2.	3.	4.	5.
	10				
(A)	$3 \overline{)30}$	$5 \overline{)50}$	$3 \overline{)60}$	$2 \overline{)60}$	$3 \overline{)90}$
(B)	$4 \overline{)40}$	$2 \overline{)20}$	$4 \overline{)80}$	$2 \overline{)40}$	$2 \overline{)80}$

General Practice 20

Write the answers on a sheet of paper. Time allowed: 12 minutes.

1.	2.	3.	4.
Divide:	Subtract:	Multiply:	Add:
$2\overline{)89}$	$\begin{array}{r} 700 \\ 601 \\ \hline \end{array}$	$\begin{array}{r} \$87 \\ 2 \\ \hline \end{array}$	$\begin{array}{r} 187 \\ 213 \\ \hline \end{array}$

5.	6.	7.	8.
Multiply:	Subtract:	Add:	Divide:
$\begin{array}{r} 607 \\ 5 \\ \hline \end{array}$	$\begin{array}{r} 201 \\ 199 \\ \hline \end{array}$	$\begin{array}{r} 19 \\ 26 \\ 19 \\ 17 \\ 3 \\ \hline \end{array}$	$2\overline{)51}$

9. An iceman cut a block of ice weighing 80 pounds into 2 equal pieces. How many pounds did each piece weigh?

10. There are 980 seats on the first floor of a theater. There are 545 seats on the second floor and 325 seats on the third floor. How many seats are there in the theater?

11. There were 24 people riding on a street car. Each one paid the conductor 5¢. How much money did the conductor collect on that trip?

12. Helen is reading a book with 378 pages in it. Mary is reading one with 247 pages in it. How many more pages has Helen's book than Mary's?

Using 3, 4, and 5 in Dividing, with Remainders

You noticed, in dividing by 2, that you sometimes have 1 left over. In dividing by 3, you may have 1 or 2 left over. In dividing by 4, you may have 1, 2, or 3 left over. And, in dividing by 5, you may have 1, 2, 3, or 4 left over. You should learn facts like these. They will help you very much when you get farther along in division. In the next three lessons are the number facts you need to know in dividing by 3, 4, and 5 when there are remainders. Study these facts till you think you know them.

Facts You Should Know in Dividing by 3, with Remainders

Divide each of the following numbers by 3, naming the quotient and remainder. In the first, think, "3 into 23, 7 times, remainder 2." Write 7, R. 2.

	1.	2.	3.	4.
	7, R. 2			
(A)	$3\overline{)23}$	$3\overline{)5}$	$3\overline{)10}$	$3\overline{)1}$
(B)	$3\overline{)8}$	$3\overline{)16}$	$3\overline{)22}$	$3\overline{)11}$
(C)	$3\overline{)28}$	$3\overline{)7}$	$3\overline{)26}$	$3\overline{)19}$
(D)	$3\overline{)25}$	$3\overline{)20}$	$3\overline{)4}$	$3\overline{)17}$
(E)	$3\overline{)14}$	$3\overline{)2}$	$3\overline{)29}$	$3\overline{)13}$

Facts You Should Know in Dividing by 4, with Remainders

Think the right answers for these:

1.

2.

(A) $9 \div 4 = 2, \text{ R. } 1$

$5 \div 4 = 1, \text{ R. } 1$

(B) $14 \div 4 = 3, \text{ R. } 2$

$1 \div 4 = 0, \text{ R. } 1$

(C) $2 \div 4 = 0, \text{ R. } 2$

$38 \div 4 = 9, \text{ R. } 2$

(D) $15 \div 4 = 3, \text{ R. } 3$

$22 \div 4 = _?_, \text{ R. } _?_$

(E) $21 \div 4 = _?_, \text{ R. } _?_$

$3 \div 4 = _?_, \text{ R. } _?_$

(F) $6 \div 4 = _?_, \text{ R. } _?_$

$7 \div 4 = _?_, \text{ R. } _?_$

(G) $25 \div 4 = _?_, \text{ R. } _?_$

$23 \div 4 = _?_, \text{ R. } _?_$

(H) $11 \div 4 = _?_, \text{ R. } _?_$

$10 \div 4 = _?_, \text{ R. } _?_$

(I) $39 \div 4 = _?_, \text{ R. } _?_$

$26 \div 4 = _?_, \text{ R. } _?_$

(J) $29 \div 4 = _?_, \text{ R. } _?_$

$30 \div 4 = _?_, \text{ R. } _?_$

(K) $17 \div 4 = _?_, \text{ R. } _?_$

$13 \div 4 = _?_, \text{ R. } _?_$

(L) $27 \div 4 = _?_, \text{ R. } _?_$

$18 \div 4 = _?_, \text{ R. } _?_$

(M) $19 \div 4 = _?_, \text{ R. } _?_$

$34 \div 4 = _?_, \text{ R. } _?_$

(N) $33 \div 4 = _?_, \text{ R. } _?_$

$31 \div 4 = _?_, \text{ R. } _?_$

(O) $37 \div 4 = _?_, \text{ R. } _?_$

$35 \div 4 = _?_, \text{ R. } _?_$

Facts You Should Know in Dividing by 5, with Remainders

Think the quotients and remainders for these:

1.

2.

3.

4.

5.

2, R. 1

(A) $5 \overline{)11}$

$5 \overline{)36}$

$5 \overline{)24}$

$5 \overline{)29}$

$5 \overline{)1}$

9, R. 2

(B) $5 \overline{)47}$

$5 \overline{)13}$

$5 \overline{)37}$

$5 \overline{)7}$

$5 \overline{)18}$

(C) $5 \overline{)8}$

$5 \overline{)26}$

$5 \overline{)31}$

$5 \overline{)14}$

$5 \overline{)38}$

	1.	2.	3.	4.	5.
(D)	$5\overline{)48}$	$5\overline{)9}$	$5\overline{)27}$	$5\overline{)16}$	$5\overline{)32}$
(E)	$5\overline{)46}$	$5\overline{)49}$	$5\overline{)12}$	$5\overline{)28}$	$5\overline{)17}$
(F)	$5\overline{)34}$	$5\overline{)6}$	$5\overline{)43}$	$5\overline{)23}$	$5\overline{)3}$
(G)	$5\overline{)21}$	$5\overline{)4}$	$5\overline{)41}$	$5\overline{)22}$	$5\overline{)42}$
(H)	$5\overline{)2}$	$5\overline{)19}$	$5\overline{)39}$	$5\overline{)33}$	$5\overline{)44}$

Dividing Three-Figure Numbers, with Remainders



One day Mr. Brown said to his three boys, Ralph, Charles, and James: "Boys, I have thought for a long time that I should like to put some money in the bank down town for each of you, to be saved for you until you are young men. I have \$695 now which I can spare, and I want to give each of you the same

amount. Now, if you boys will find out how much of this \$695 I should give to each of you, if I give each of you the same amount, and how much I shall have left over, I will put the money in the bank to-day."

Ralph: All right, Father, we will find out.

Charles: Let's see now. How should we do it?

James: I know; we must find one-third of \$695.

Ralph: That is not hard to do. You just think, "3 into 6, 2 times," and write 2 over the 6. Then you think, "3 into 9, 3 times," and write 231, R. 2 3 over the 9. Then you think, "3 into 3)695 5, 1 time, and 2 over." Write 1 over the 5 and also write R. 2. Do you see that

Father can give each of us \$231 and still have \$2 left?

Charles: Yes, that is right. One-third of \$695 is \$231, and there are \$2 left over.

Father: Well, I think I'll have to keep my promise. You have worked it right. When I go down town to-day, I will put \$231 in the bank for each one of you. I want you to save this money and not spend it for anything. Maybe you will earn some money to put with it. And, when you become young men, you will have a large sum of money saved, and you can buy a store of your own, or go to school, or travel, just as you please.

Can you work some problems like the one Ralph, Charles, and James worked?

On pages 260 and 261 are some examples that are almost like the one Ralph, Charles, and James did. If you understand that one, you should not have any trouble with those. Study them carefully and get your teacher to help you on any that may bother you.

Divide 976 by 3.

Think, "3 into 9, 3 times." Write 3

325, R. 1 over the 9.

3)976

Think, "3 into 7, 2 times, and 1 over."

Write 2 over the 7; carry 1.

Then think, "3 into 16, 5 times, and 1 over." Write 5 over the 6, and write R. 1, meaning a remainder of 1.

Can you see how this example is different from the one Ralph, Charles, and James worked? It is because you have to carry when you divide 7 by 3. In this example there are really two remainders, and you have to carry the first remainder.

Divide 857 by 3.

Think, "3 into 8, 2 times, and 2 over."

285, R. 2 Write 2 over the 8; carry 2.

3)857

Think, "3 into 25, 8 times, and 1 over."

Write 8 over the 5; carry 1.

Think, "3 into 17, 5 times, and 2 over." Write 5 over the 7, and write R. 2, meaning a remainder of 2. Notice that, in this example, there is a remainder every time you divide.

Divide 138 by 4.

In this example we cannot divide 1

34, R. 2 by 4, as we have been doing; so we start

4)138

by dividing 13 by 4.

Think, "4 into 13, 3 times, and 1 over."

Write 3 over the 3; carry 1.

Think, "4 into 18, 4 times, and 2 over." Write 4 over the 8 and write R. 2.

Divide 957 by 5.

Think, "5 into 9, 1 time, and 4 over."

191, R. 2 Write 1 over the 9 and carry 4.

$5\overline{)957}$

Think, "5 into 45, 9 times." Write 9 over the 5.

Notice that there is nothing to carry. Think, "5 into 7, 1 time, and 2 over." Write 1 over the 7 and write R. 2.

Divide 875 by 4.

Think, "4 into 8, 2 times." Write 2

218, R. 3 over the 8. Notice that there is nothing

$4\overline{)875}$

to carry.

Think, "4 into 7, 1 time, and 3 over."

Write 1 over the 7; carry 3.

Think, "4 into 35, 8 times, and 3 over." Write 8 over the 5 and write R. 3.

Divide 904 by 3.

Think, "3 into 9, 3 times." Write 3

301, R. 1 over the 9.

$3\overline{)904}$

Think, "3 into 0, 0 time." Write 0

over the 0. This is the thing to watch for in this kind of example.

Think, "3 into 4, 1 time, and 1 over." Write 1 over the 4 and write R. 1.

Divide 615 by 3.

Think, "3 into 6, 2 times." Write 2 over

205 the 6.

$3\overline{)615}$

Think, "3 into 1, 0 time, and 1 over." Write

0 above the 1; carry 1.

Think, "3 into 15, 5 times." Write 5 over the 5.

Problems

1. Helen's father runs a dairy. One day he sold 269 pints of milk. Helen wants to know how many quarts this was, and how many pints remaining. You may find the answers for Helen.

2. How many quarts of milk are there in 437 pints, and how many pints remaining?

3. Henry measured his father's garden. It was 47 feet wide and 124 feet long. How many yards wide was the garden, and how many feet remaining? How many yards long was it, and how many feet remaining?

4. Alice's father sells oil and gasoline at a filling station. One day he sold 237 quarts of oil. How many gallons was this, and how many quarts over?

5. James has 132 pennies in his savings bank. This is equal to how many nickels, and how many pennies over?

6. Walter sold season tickets for the basket-ball games at the Morton High School. The total amount of money he took in was \$576. If each person to whom Walter sold a ticket paid \$2, how many people bought season tickets from him?

Division Practice

Do not copy. Place a folded paper above each row and write the answers on the paper.

	1.	2.	3.	4.	5.
(A)	$2\overline{)824}$	$5\overline{)505}$	$4\overline{)240}$	$3\overline{)600}$	$4\overline{)875}$
(B)	$5\overline{)678}$	$3\overline{)639}$	$2\overline{)847}$	$3\overline{)607}$	$4\overline{)380}$
(C)	$4\overline{)807}$	$2\overline{)800}$	$4\overline{)488}$	$3\overline{)648}$	$5\overline{)703}$

General Practice 21

Write the answers on a sheet of paper. Time allowed: 12 minutes.

1.	2.	3.	4.
Add:	Multiply:	Subtract:	Divide:
19	654	307	
27	<u>3</u>	<u>198</u>	3)912
16			
<u>19</u>			
5.	6.	7.	8.
Multiply:	Add:	Divide:	Subtract:
\$250	536		\$713
<u>5</u>	<u>384</u>	4) <u>875</u>	<u>338</u>

9. Jack saves part of the money he earns each week. If he saved 57¢ the first week, 63¢ the second, \$1.02 the third, and 75¢ the fourth, how much money did he save in four weeks?

10. There are 698 pupils in the Lincoln School. If there are 387 boys, how many girls are there in the school?

11. You can serve 4 glassfuls out of one quart of milk. How many glassfuls will 6 quarts make?

12. Paul weighs 47 pounds. His elder brother weighs 98 pounds. How many pounds will Paul have to gain to weigh as much as his elder brother?

Saving Money

Do you earn your own spending money, or does your father give it to you? About how much do you earn each week? How much does your father give you?

Do you spend all the money you get, or do you save some of it?

Would any of you boys like to have a new baseball suit? A new glove? A new ball?

Would any of you girls like to have a new doll? A new doll house? Some new doll furniture?

Would you like to have a pony? A bicycle?

Would you like to have plenty of money for Christmas?

Would you like to buy a birthday present for Mother? For Father?

In order to have money to buy things you want, or to pay the expense of the things you want to do, each of you should save a part of all the money you get. If you save a small part of all the money you get, the savings will soon grow into a large sum of money. In order to save money, you should have a savings bank; and whenever you get a few pennies, you should put some of them into the bank. Do this each time you get some money, and you will soon have a large sum of money saved.

Problems about Saving Money

1. George wants to buy a new knife. If George saves 5 cents each week for 4 weeks, how much will he have toward the price of a knife?

2. One week Mary put 3 cents and a nickel into her savings bank. The next week she put in a dime and 2 cents. The third week she earned a quarter by washing dishes and put it into the bank. The fourth week she put in a dime, a nickel, and 2 cents. The fifth week she did without candy for the whole week and saved 3 nickels, which she put into her bank. How much did Mary save each week? How much did Mary save all together during these 5 weeks?

3. If you begin on Monday and save 5¢ each day for 6 days, how much money will you have?

4. If you save 3¢ each week, how much can you save in 4 weeks?

5. If you save 1¢ each day, how much can you save in January? In February? In March? How much in January, February, and March together?

General Practice 22

Write the answers on a sheet of paper. Time allowed: 12 minutes.

1.	2.	3.	4.
Multiply:	Add:	Divide:	Subtract:
$\begin{array}{r} 876 \\ 2 \end{array}$	$\begin{array}{r} \$179 \\ 423 \end{array}$	$\begin{array}{r} 5 \overline{)678} \end{array}$	$\begin{array}{r} 701 \\ 695 \end{array}$
5.	6.	7.	8.
Divide:	Subtract:	Add:	Multiply:
$\begin{array}{r} 3 \overline{)607} \end{array}$	$\begin{array}{r} 400 \\ 193 \end{array}$	$\begin{array}{r} 279 \\ 298 \\ 19 \end{array}$	$\begin{array}{r} 177 \\ 3 \end{array}$

9. Last spring Mr. Brown made 12 gallons of maple syrup. How many quart bottles could he fill with the maple syrup he made?

10. Five boys who play together bought a football for \$2.50 and divided the cost equally. How much was each boy's share of the cost?

11. Frank has a paper route. He delivers 34 papers each day. How many papers does he deliver in 7 days?

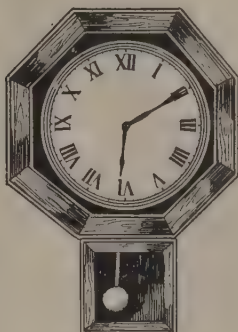
12. In a bean bag game, Harry's scores were 2, 4, 7, 1, 8; Dick's, 0, 1, 8, 3, 9; James's, 2, 5, 8, 1, 6; Mary's, 2, 3, 4, 7, 4; and Daisy's, 1, 4, 8, 4, 2. Find each total score. Who had the two highest scores?

Telling Time in Minutes



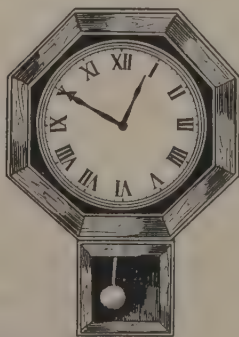
1. You have already learned how to tell time in hours, half hours, and quarter hours. Now you will learn how to tell time in minutes.

2. When the minute hand points to 1 and the hour hand is a little past 3, it is 5 minutes past three o'clock, or 3:05.



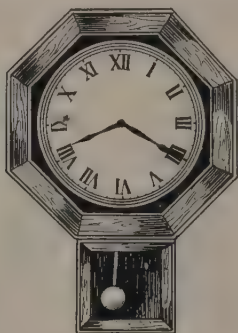
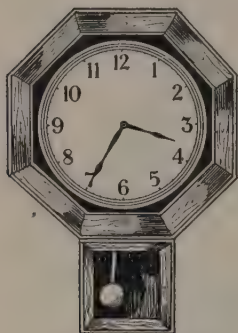
3. When the minute hand points to II and the hour hand is a little past VI, it is 10 minutes past six o'clock, or 6:10.

4. When the minute hand points to 11 and the hour hand is nearly to 5, it is 5 minutes to five o'clock, or 4:55.



5. When the minute hand points to X and the hour hand is nearly to I, it is 10 minutes to one o'clock, or 12:50.

6. Tell the time on each of these clocks:



7. How many minute spaces are there between 12 and 1? Between 1 and 2? Between 12 and 2? Between 2 and 3? Between 12 and 3? Between 11 and 12? How many minutes are there in one hour?

60 minutes (min.) = 1 hour (hr.)
24 hours = 1 day (da.)

8. When the minute hand points to XII and the hour hand is at IIII, what time is it?

9. When the minute hand is 1 minute space past 12 and the hour hand is between 4 and 5, it is 1 minute past four o'clock, or 4:01.

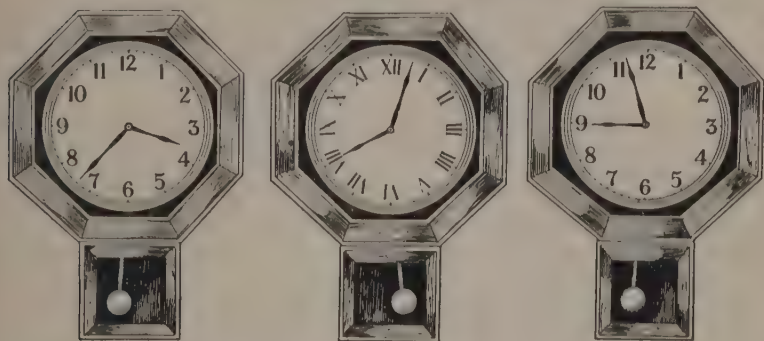
10. When the minute hand is 2 minute spaces past 12 and the hour hand is between 4 and 5, it is 2 minutes past four o'clock, or 4:02.

11. Where are the hands of a clock at 3 minutes past four? At 4 minutes past four? At 5 minutes past four? At 9 minutes past four? At 21 minutes past four?

12. When the minute hand is 1 minute space before XII and the hour hand is between IIII and V, it is 1 minute of five o'clock, or 4:59.

13. Where are the hands of a clock at 2 minutes of five? At 12 minutes of five? At 29 minutes of 5?

14. What time is it on each of these clocks?



Practice in Telling Time

1. Set your toy clock to show that it is half past three o'clock; 7:30; half past one o'clock.

2. Set your clock to show that it is 4:15; a quarter past two o'clock.

3. Show where the hands are at a quarter of five o'clock; 7:45; a quarter of six; 6:45.

4. Set the hands to show the time at 12 minutes past three; 26 minutes of four; 23 minutes past nine; 20 minutes of seven; 6 minutes of eleven; 10:32; 4:07; 12:10; 7:53.

Problems

Remember, in working problems, you must:

1. See what the problem tells you.
2. See what the problem asks you to find.
3. Decide whether to add, subtract, multiply, or divide.
4. Add, subtract, multiply, or divide as you decide.

1. Frank and Jim were trying to see how far they could throw a basket ball. Frank threw the ball 79 feet, and Jim threw it 92 feet. How much farther did Jim throw the ball than Frank?

2. Helen went to visit a friend at 3 o'clock in the afternoon. She stayed until half past five. How many hours did she stay at her friend's house?

3. Dick picked 15 boxes of berries. He earned 3¢ for each box that he picked. How much did Dick get for picking berries?

4. George's father had \$475 in the bank. One day he put in \$268 more. How much money did he then have in the bank?

5. Potatoes were selling for \$1.60 a bushel at the market. Jane's mother bought 3 bushels. How much did the 3 bushels cost?

6. Ruth and her mother and father are spending their vacation at Echo Lake. One afternoon last week Ruth counted 5 sailboats on the lake. Then she counted the rowboats and found that there were 10 times as many rowboats as sailboats. How many rowboats were there?

7. Dorothy paid 28¢ for a half pound of butter. How much would a pound of the same kind of butter cost?

8. Robert has a stamp book that holds 32 stamps on each page. He has 5 pages filled. How many stamps are in Robert's book?

9. The grocer had 100 pounds of sugar in a barrel. If he put all the sugar into small bags with 5 pounds in each bag, how many small bags could he fill?

10. Jim looked at the thermometer inside his house and found that the temperature was 68 degrees. He

then looked at the thermometer which was outside and found that it read 46 degrees. How much colder was it outside than inside?

11. The nurse weighed Harry to-day and told him that he was 6 pounds under weight for his age and height. Harry weighs 64 pounds. How many pounds would Harry weigh if he were up to standard?

12. The Brown family started on an automobile trip of 750 miles. When they had traveled 240 miles, how many miles did they still have to go?

13. Jean wants to buy a doll which will cost 65¢. Jean's mother pays her .5¢ each time that she washes the dishes. How many times will Jean have to wash dishes to earn enough to buy the doll?

General Practice 23

Write the answers on a sheet of paper. Time allowed: 12 minutes.

1.	2.	3.	4.
Add:	Multiply:	Subtract:	Divide:
210	\$475	532	3) <u>648</u>
314	4	464	
488	<u> </u>	<u> </u>	
5.	6.	7.	8.
Multiply:	Add:	Divide:	Subtract:
368	243	5) <u>703</u>	802
3	151		<u>587</u>
<u> </u>	103		
	776		
	<u>425</u>		

9. Jack and his brother and sister went to the circus Saturday. One ticket cost 50¢. How much did it cost all together for the three children to go to the circus?

10. Two years ago Harry weighed 48 pounds. He now weighs 61 pounds. How many pounds has Harry gained in the last two years?

11. Mr. Brown drove his automobile 132 miles in 4 hours. This is equal to how many miles each hour?

12. The gasoline tank on Mr. Smith's automobile will hold 18 gallons of gasoline. How many gallons are there in the tank when it is half full?

Subtraction Practice

Subtract, and write the differences on a folded paper.

	1.	2.	3.	4.	5.	6.
(A)	686	653	935	653	864	431
	<u>359</u>	<u>367</u>	<u>284</u>	<u>236</u>	<u>367</u>	<u>257</u>
(B)	731	724	642	683	520	852
	<u>194</u>	<u>469</u>	<u>258</u>	<u>569</u>	<u>289</u>	<u>257</u>

Review

On page 273 is a review of what you have been studying. Write the numbers 1 to 17 on a sheet of paper. After each number you have written, write the answer to the question that has the same number.

At the end of each question you will see a page number. If you missed any part of the test, turn back to the page number given after that part of the test, where you will find how to answer what you missed. Study what

you missed until you are sure you know what to do. Then go back to the review and again try the part you missed. Do this until you do not miss anything or until your teacher tells you to work on something else.

1. What step is necessary in multiplying 27 by 2 that is not necessary in multiplying 23 by 2? (Page 228)

2. What numbers may you need to carry when you multiply by 3? (Page 231)

3. What numbers may you need to carry when you multiply by 4? (Page 231)

4. What number do you need to carry in multiplying 46 by 5? (Page 231)

5. How many times do you need to carry in multiplying 452 by 3? (Page 239)

6. In what column do you carry when you multiply 323 by 4? (Page 235)

7. What do you call the number left over in a division example? (Page 246)

8. What is $0 \div 6$? (Page 254)

9. What is $4 \div 1$? (Page 254)

10. What is $0 \div$ any number? (Page 254)

11. What is the remainder in $49 \div 5$? (Page 258)

12. What is the remainder in $3 \overline{)19}$? (Page 256)

13. Divide: $4 \overline{)278}$. (Page 260)

14. On a clock face, how many minute spaces are there between 12 and 1? (Page 268)

15. Where are the hands of a clock when it is 4 minutes of 9 o'clock? (Page 268)

16. How many minutes are there in an hour? (Page 268)

17. In what columns do you carry when you multiply 475 by 2? (Page 241)

CHAPTER X

USING 6, 7, 8, AND 9 IN MULTIPLICATION AND DIVISION

Sixteen New Multiplication and Division Facts

1. Count by 8's from 8 to 72, saying, "8, 16, 24," and so on.
2. Count by 6's from 6 to 54, saying, "6, 12, 18," and so on.
3. Count by 7's from 7 to 63, saying, "7, 14, 21," and so on.
4. Count by 9's from 9 to 81, saying, "9, 18, 27," and so on.

		Add:	Six 8's are how many?
		6	$6 \times 8 = __? __$
Add:		6	Eight 6's are how many?
8		6	$8 \times 6 = __? __$
8		6	
8		6	
8		6	
8		6	
Six 8's are	8	Eight 6's are	6

You have already learned 84 different facts in multiplication and 84 different facts in division. They are all in the table on page 275. Suppose that you wish to find the product of 7×4 . Look for the "7" column and follow it down to the "4" row. What product do

you find? Is that right? In the same way find the product of 3×8 . 5×4 . Find some other products.

But suppose that, instead of a product, you wish to find a quotient. Perhaps you are looking for the quotient of $30 \div 6$. In the top row, where it says "Divisors," find your divisor, 6. Then follow down the column until you come to the dividend, 30. Now follow across the row to the left-hand side, where it says "Quotients," and you will find the quotient, 5. In the same way find the quotient of $35 \div 7$. $40 \div 5$. Find some other quotients.

Multipliers or Divisors

	0	1	2	3	4	5	6	7	8	9
0	0	0	0	0	0	0	0	0	0	0
1	0	1	2	3	4	5	6	7	8	9
2	0	2	4	6	8	10	12	14	16	18
3	0	3	6	9	12	15	18	21	24	27
4	0	4	8	12	16	20	24	28	32	36
5	0	5	10	15	20	25	30	35	40	45
6	0	6	12	18	24	30				
7	0	7	14	21	28	35				
8	0	8	16	24	32	40				
9	0	9	18	27	36	45				

Multiplicands or Quotients

Dividends

Products or

276 Multiplication and Division Facts

Part of the table, you see, is missing. That is because you still have 16 multiplication and 16 division facts to learn. Here they are. Think the right answers for these:

	1.	2.
(A)	$6 \times 6 = \underline{\quad?}\underline{\quad}$	$36 \div 6 = \underline{\quad?}\underline{\quad}$
(B)	$8 \times 7 = \underline{\quad?}\underline{\quad}$	$56 \div 8 = \underline{\quad?}\underline{\quad}$
(C)	$7 \times 6 = \underline{\quad?}\underline{\quad}$	$42 \div 7 = \underline{\quad?}\underline{\quad}$
(D)	$8 \times 9 = \underline{\quad?}\underline{\quad}$	$72 \div 8 = \underline{\quad?}\underline{\quad}$
(E)	$7 \times 8 = \underline{\quad?}\underline{\quad}$	$56 \div 7 = \underline{\quad?}\underline{\quad}$
(F)	$9 \times 8 = \underline{\quad?}\underline{\quad}$	$72 \div 9 = \underline{\quad?}\underline{\quad}$
(G)	$9 \times 6 = \underline{\quad?}\underline{\quad}$	$54 \div 9 = \underline{\quad?}\underline{\quad}$
(H)	$6 \times 7 = \underline{\quad?}\underline{\quad}$	$42 \div 6 = \underline{\quad?}\underline{\quad}$
(I)	$6 \times 9 = \underline{\quad?}\underline{\quad}$	$54 \div 6 = \underline{\quad?}\underline{\quad}$
(J)	$7 \times 7 = \underline{\quad?}\underline{\quad}$	$49 \div 7 = \underline{\quad?}\underline{\quad}$
(K)	$8 \times 6 = \underline{\quad?}\underline{\quad}$	$48 \div 8 = \underline{\quad?}\underline{\quad}$
(L)	$9 \times 7 = \underline{\quad?}\underline{\quad}$	$63 \div 9 = \underline{\quad?}\underline{\quad}$
(M)	$6 \times 8 = \underline{\quad?}\underline{\quad}$	$48 \div 6 = \underline{\quad?}\underline{\quad}$
(N)	$7 \times 9 = \underline{\quad?}\underline{\quad}$	$63 \div 7 = \underline{\quad?}\underline{\quad}$
(O)	$8 \times 8 = \underline{\quad?}\underline{\quad}$	$64 \div 8 = \underline{\quad?}\underline{\quad}$
(P)	$9 \times 9 = \underline{\quad?}\underline{\quad}$	$81 \div 9 = \underline{\quad?}\underline{\quad}$

Now make a table of your own like the one on page 275 and fill in all the spaces.

The 100 Multiplication Facts

Here are the 100 multiplication facts. Review them.

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
(A)	0	8	3	8	1	6	1	5	2	4
	<u>0</u>	<u>9</u>	<u>0</u>	<u>2</u>	<u>7</u>	<u>0</u>	<u>3</u>	<u>7</u>	<u>1</u>	<u>3</u>

Multiplication and Division Facts 277

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
(B)	<u>4</u> 0	<u>0</u> 1	<u>9</u> 2	<u>3</u> 1	<u>8</u> 3	<u>1</u> 8	<u>6</u> 1	<u>9</u> 0	<u>5</u> 8	<u>7</u> 0
(C)	<u>2</u> 9	<u>4</u> 1	<u>0</u> 2	<u>6</u> 4	<u>3</u> 2	<u>9</u> 4	<u>1</u> 9	<u>6</u> 2	<u>2</u> 2	<u>5</u> 9
(D)	<u>5</u> 0	<u>7</u> 4	<u>4</u> 2	<u>0</u> 3	<u>6</u> 5	<u>2</u> 7	<u>9</u> 6	<u>1</u> 0	<u>6</u> 3	<u>2</u> 3
(E)	<u>8</u> 0	<u>5</u> 1	<u>7</u> 5	<u>9</u> 8	<u>0</u> 4	<u>6</u> 6	<u>8</u> 5	<u>3</u> 4	<u>1</u> 1	<u>2</u> 4
(F)	<u>9</u> 3	<u>8</u> 1	<u>5</u> 2	<u>7</u> 6	<u>3</u> 7	<u>0</u> 5	<u>6</u> 7	<u>8</u> 6	<u>3</u> 5	<u>1</u> 2
(G)	<u>2</u> 0	<u>9</u> 7	<u>2</u> 5	<u>5</u> 3	<u>7</u> 7	<u>3</u> 8	<u>0</u> 6	<u>4</u> 4	<u>8</u> 7	<u>3</u> 6
(H)	<u>4</u> 7	<u>1</u> 4	<u>7</u> 1	<u>2</u> 6	<u>5</u> 4	<u>7</u> 8	<u>3</u> 9	<u>0</u> 7	<u>4</u> 5	<u>8</u> 8
(I)	<u>6</u> 8	<u>4</u> 8	<u>1</u> 5	<u>7</u> 2	<u>8</u> 4	<u>5</u> 5	<u>7</u> 9	<u>9</u> 1	<u>0</u> 8	<u>4</u> 6
(J)	<u>9</u> 5	<u>6</u> 9	<u>1</u> 6	<u>4</u> 9	<u>7</u> 3	<u>2</u> 8	<u>5</u> 6	<u>3</u> 3	<u>9</u> 9	<u>0</u> 9

The 90 Division Facts

Here are the 90 division facts. Review them.

	1.	2.	3.	4.	5.	6.	7.	8.	9.
(A)	$3\overline{)0}$	$2\overline{)14}$	$5\overline{)10}$	$3\overline{)6}$	$5\overline{)40}$	$7\overline{)21}$	$2\overline{)18}$	$8\overline{)24}$	$3\overline{)27}$

	1.	2.	3.	4.	5.	6.	7.	8.	9.
(B)	$5\overline{)45}$	$1\overline{)6}$	$3\overline{)24}$	$4\overline{)28}$	$6\overline{)42}$	$7\overline{)7}$	$1\overline{)1}$	$6\overline{)12}$	$4\overline{)8}$
(C)	$9\overline{)27}$	$2\overline{)16}$	$8\overline{)72}$	$5\overline{)35}$	$1\overline{)9}$	$4\overline{)4}$	$2\overline{)4}$	$5\overline{)0}$	$7\overline{)63}$
(D)	$6\overline{)36}$	$3\overline{)21}$	$9\overline{)36}$	$8\overline{)16}$	$7\overline{)0}$	$6\overline{)30}$	$1\overline{)8}$	$4\overline{)24}$	$3\overline{)9}$
(E)	$4\overline{)32}$	$1\overline{)2}$	$7\overline{)28}$	$2\overline{)2}$	$4\overline{)0}$	$6\overline{)6}$	$7\overline{)35}$	$5\overline{)25}$	$1\overline{)3}$
(F)	$8\overline{)8}$	$2\overline{)8}$	$5\overline{)30}$	$6\overline{)0}$	$5\overline{)5}$	$2\overline{)6}$	$6\overline{)24}$	$8\overline{)32}$	$2\overline{)10}$
(G)	$9\overline{)0}$	$3\overline{)18}$	$8\overline{)0}$	$1\overline{)0}$	$6\overline{)48}$	$8\overline{)64}$	$9\overline{)45}$	$3\overline{)15}$	$8\overline{)56}$
(H)	$9\overline{)18}$	$2\overline{)0}$	$7\overline{)14}$	$4\overline{)12}$	$3\overline{)3}$	$1\overline{)4}$	$4\overline{)20}$	$9\overline{)54}$	$7\overline{)56}$
(I)	$1\overline{)5}$	$4\overline{)36}$	$4\overline{)16}$	$7\overline{)42}$	$2\overline{)12}$	$8\overline{)48}$	$9\overline{)63}$	$6\overline{)54}$	$3\overline{)12}$
(J)	$9\overline{)9}$	$7\overline{)49}$	$1\overline{)7}$	$5\overline{)15}$	$9\overline{)72}$	$6\overline{)18}$	$9\overline{)81}$	$8\overline{)40}$	$5\overline{)20}$

Problems

1. One week equals 7 days. Six weeks equal how many days? Nine weeks? Seven weeks?

2. In a schoolroom there are 6 rows of desks with 7 desks in each row. How many desks are there in all?

3. How many days make one week? How many days are there in 8 weeks?

4. Eighteen cents will pay for how many 6-cent street-car fares?

5. If 1 top costs 7 cents, what will 7 tops cost?
6. A fruit grower set out 72 apple trees in 8 rows, putting the same number of trees in each row. How many apple trees did he set in each row?
7. Grace and her mother can put up 8 cans of tomatoes in an hour. How many cans of tomatoes can they put up in 8 hours?
8. There are 6 spoons in a set of spoons. How many sets are there in 24 spoons? In 54 spoons? In 12 spoons? In 36 spoons? In 18 spoons?
9. In a farmer's orchard there are 45 apple trees. There are 9 apple trees in one row, and each row has the same number of trees. How many rows are there?
10. How many weeks are there in 63 days? In 42 days? In 35 days? In 49 days?
11. Seven boys bought a boat together for 56 dollars and divided the cost equally. How much did the boat cost each boy?
12. William went to the country and stayed 3 weeks. How many days did he stay?

Practice in Using 6, 7, 8, and 9 in Multiplication and Division

Think the right answers for these:

1.	2.
(A) Six 6's are $_? _$	There are $_? _$ 9's in 72
(B) 42 divided by 7 = $_? _$	$8 \times 7 = _? _$
(C) 6 times 7 are $_? _$	Seven times six equals $_? _$
(D) There are $_? _$ 8's in 56	$36 \div 6 = _? _$

	1.	2.
(E)	8 multiplied by 9 = <u> ? </u>	Nine 8's are <u> ? </u>
(F)	$56 \div 7 = \underline{\quad? \quad}$	72 divided by 8 = <u> ? </u>
(G)	$9 \times 6 = \underline{\quad? \quad}$	7 times 8 = <u> ? </u>
(H)	$42 \div 6 = \underline{\quad? \quad}$	$54 \div 9 = \underline{\quad? \quad}$

Multiply:

(I)	6	7	8	9	6	7	8	9
	<u> 9 </u>	<u> 7 </u>	<u> 6 </u>	<u> 7 </u>	<u> 8 </u>	<u> 9 </u>	<u> 8 </u>	<u> 9 </u>

Divide:

(J)	$8 \overline{)48}$	$7 \overline{)63}$	$6 \overline{)54}$	$6 \overline{)48}$	$7 \overline{)49}$	$8 \overline{)64}$	$9 \overline{)81}$	$9 \overline{)63}$
-----	--------------------	--------------------	--------------------	--------------------	--------------------	--------------------	--------------------	--------------------

Multiplying by 6, 7, 8, and 9, with Carrying

When you multiply numbers by 6, you may have 1, 2, 3, 4, or 5 to carry. When you multiply numbers by 7, you may have 1, 2, 3, 4, 5, or 6 to carry. When you multiply numbers by 8, you may have 1, 2, 3, 4, 5, 6, or 7 to carry. When you multiply numbers by 9, you may have 1, 2, 3, 4, 5, 6, 7, or 8 to carry. In the next lesson are all the carrying facts you need to know to multiply numbers by 6.

Multiplying by 6, with Carrying

Place a folded paper under the examples in this lesson. Multiply, and add, as directed, and write the answers on the paper. In the first example, think, "Six 6's are 36, and 1 are 37." Write 37. Do the others in the same way.

Multiply, and add 1.

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
(A)	6	3	1	7	0	5	8	2	9	4
	<u>6</u>	<u>6</u>	<u>6</u>	<u>6</u>	<u>6</u>	<u>6</u>	<u>6</u>	<u>6</u>	<u>6</u>	<u>6</u>

Multiply, and add 2.

(B)	2	1	4	0	3	6	8	5	9	7
	<u>6</u>	<u>6</u>	<u>6</u>	<u>6</u>	<u>6</u>	<u>6</u>	<u>6</u>	<u>6</u>	<u>6</u>	<u>6</u>

Multiply, and add 3.

(C)	3	0	9	1	7	2	6	4	8	5
	<u>6</u>	<u>6</u>	<u>6</u>	<u>6</u>	<u>6</u>	<u>6</u>	<u>6</u>	<u>6</u>	<u>6</u>	<u>6</u>

Multiply, and add 4.

(D)	1	3	0	4	2	8	5	9	6	7
	<u>6</u>	<u>6</u>	<u>6</u>	<u>6</u>	<u>6</u>	<u>6</u>	<u>6</u>	<u>6</u>	<u>6</u>	<u>6</u>

Multiply, and add 5.

(E)	3	7	1	4	9	0	2	8	5	6
	<u>6</u>	<u>6</u>	<u>6</u>	<u>6</u>	<u>6</u>	<u>6</u>	<u>6</u>	<u>6</u>	<u>6</u>	<u>6</u>

Multiplication Practice

Do not copy. Multiply, and write the products on a folded paper.

	1.	2.	3.	4.	5.	6.
(A)	554	466	84	759	797	47
	<u>6</u>	<u>6</u>	<u>6</u>	<u>6</u>	<u>6</u>	<u>6</u>

	1.	2.	3.	4.	5.	6.
(B)	152 <u>6</u>	305 <u>6</u>	683 <u>6</u>	16 <u>6</u>	699 <u>6</u>	926 <u>6</u>
(C)	964 <u>6</u>	729 <u>6</u>	257 <u>6</u>	12 <u>6</u>	878 <u>6</u>	488 <u>6</u>
(D)	344 <u>6</u>	103 <u>6</u>	602 <u>6</u>	736 <u>6</u>	37 <u>6</u>	769 <u>6</u>
(E)	889 <u>6</u>	398 <u>6</u>	186 <u>6</u>	470 <u>6</u>	423 <u>6</u>	789 <u>6</u>
(F)	622 <u>6</u>	139 <u>6</u>	24 <u>6</u>	977 <u>6</u>	587 <u>6</u>	779 <u>6</u>

Problems

1. Paul spent 48¢ for some 2¢ stamps. How many stamps did Paul get?

2. Alice started for school at ten minutes after 8. She looked at the clock just as soon as she got to school. It was half past eight. How long did it take Alice to get to school?

3. There were 180 people at a banquet. For dessert, pie was served. If each pie was cut into 6 pieces, how many pies were needed to serve all the people?

4. Last month Mr. West's electric light bill was \$3.25. This month it is 43¢ higher than last month. How much is his electric light bill this month?

5. There were 50 words in a spelling test. Mary had 38 words right. How many did she have wrong?



6. Katherine's mother is buying 6 yards of curtain material. If it costs 59¢ a yard, how much will she have to pay for the 6 yards?

7. Jack's mother does cleaning for other people. She works by the hour and receives 40¢ an hour. On Monday she worked 7 hours. How much did she earn on Monday?

8. Tom's father has 6 men working for him. He pays each of them the same amount a week. The total for one week's work is \$252. How much does each man get a week?

9. Two boys had a lemonade stand at the fair. They sold lemonade for 5¢ a glass. One day they sold 43 glasses. How much money did they take in that day?

10. At Christmas time the three children in the Brown family went to the store together and bought a gift for their grandmother. The gift cost \$1.95. What

was each child's share of the cost of the gift if each child paid the same amount?

11. There are two ways of driving from New York City to Buffalo. It is 501 miles by the northern route and 463 miles by the southern route. How many miles can you save by taking the southern route?

Multiplying by 7, with Carrying

Think the right answers for these:

1.	2.	3.
(A) $7 \times 0 + 1 = \underline{\quad} ? \underline{\quad}$	$7 \times 2 + 6 = \underline{\quad} ? \underline{\quad}$	$7 \times 5 + 6 = \underline{\quad} ? \underline{\quad}$
(B) $7 \times 8 + 6 = \underline{\quad} ? \underline{\quad}$	$7 \times 4 + 1 = \underline{\quad} ? \underline{\quad}$	$7 \times 1 + 1 = \underline{\quad} ? \underline{\quad}$
(C) $7 \times 2 + 1 = \underline{\quad} ? \underline{\quad}$	$7 \times 0 + 3 = \underline{\quad} ? \underline{\quad}$	$7 \times 1 + 3 = \underline{\quad} ? \underline{\quad}$
(D) $7 \times 3 + 6 = \underline{\quad} ? \underline{\quad}$	$7 \times 6 + 6 = \underline{\quad} ? \underline{\quad}$	$7 \times 3 + 1 = \underline{\quad} ? \underline{\quad}$
(E) $7 \times 9 + 3 = \underline{\quad} ? \underline{\quad}$	$7 \times 2 + 3 = \underline{\quad} ? \underline{\quad}$	$7 \times 2 + 5 = \underline{\quad} ? \underline{\quad}$
(F) $7 \times 9 + 6 = \underline{\quad} ? \underline{\quad}$	$7 \times 1 + 5 = \underline{\quad} ? \underline{\quad}$	$7 \times 5 + 1 = \underline{\quad} ? \underline{\quad}$
(G) $7 \times 6 + 1 = \underline{\quad} ? \underline{\quad}$	$7 \times 3 + 5 = \underline{\quad} ? \underline{\quad}$	$7 \times 0 + 6 = \underline{\quad} ? \underline{\quad}$
(H) $7 \times 3 + 3 = \underline{\quad} ? \underline{\quad}$	$7 \times 7 + 1 = \underline{\quad} ? \underline{\quad}$	$7 \times 8 + 1 = \underline{\quad} ? \underline{\quad}$
(I) $7 \times 4 + 6 = \underline{\quad} ? \underline{\quad}$	$7 \times 0 + 4 = \underline{\quad} ? \underline{\quad}$	$7 \times 4 + 3 = \underline{\quad} ? \underline{\quad}$
(J) $7 \times 5 + 3 = \underline{\quad} ? \underline{\quad}$	$7 \times 9 + 1 = \underline{\quad} ? \underline{\quad}$	$7 \times 7 + 6 = \underline{\quad} ? \underline{\quad}$
(K) $7 \times 1 + 4 = \underline{\quad} ? \underline{\quad}$	$7 \times 2 + 4 = \underline{\quad} ? \underline{\quad}$	$7 \times 6 + 3 = \underline{\quad} ? \underline{\quad}$
(L) $7 \times 0 + 2 = \underline{\quad} ? \underline{\quad}$	$7 \times 1 + 2 = \underline{\quad} ? \underline{\quad}$	$7 \times 4 + 5 = \underline{\quad} ? \underline{\quad}$
(M) $7 \times 3 + 4 = \underline{\quad} ? \underline{\quad}$	$7 \times 7 + 3 = \underline{\quad} ? \underline{\quad}$	$7 \times 8 + 3 = \underline{\quad} ? \underline{\quad}$
(N) $7 \times 2 + 2 = \underline{\quad} ? \underline{\quad}$	$7 \times 5 + 5 = \underline{\quad} ? \underline{\quad}$	$7 \times 4 + 4 = \underline{\quad} ? \underline{\quad}$
(O) $7 \times 5 + 4 = \underline{\quad} ? \underline{\quad}$	$7 \times 6 + 4 = \underline{\quad} ? \underline{\quad}$	$7 \times 3 + 2 = \underline{\quad} ? \underline{\quad}$
(P) $7 \times 6 + 5 = \underline{\quad} ? \underline{\quad}$	$7 \times 7 + 5 = \underline{\quad} ? \underline{\quad}$	$7 \times 1 + 6 = \underline{\quad} ? \underline{\quad}$
(Q) $7 \times 7 + 4 = \underline{\quad} ? \underline{\quad}$	$7 \times 4 + 2 = \underline{\quad} ? \underline{\quad}$	$7 \times 5 + 2 = \underline{\quad} ? \underline{\quad}$
(R) $7 \times 6 + 2 = \underline{\quad} ? \underline{\quad}$	$7 \times 7 + 2 = \underline{\quad} ? \underline{\quad}$	$7 \times 8 + 2 = \underline{\quad} ? \underline{\quad}$
(S) $7 \times 9 + 4 = \underline{\quad} ? \underline{\quad}$	$7 \times 8 + 4 = \underline{\quad} ? \underline{\quad}$	$7 \times 0 + 5 = \underline{\quad} ? \underline{\quad}$
(T) $7 \times 8 + 5 = \underline{\quad} ? \underline{\quad}$	$7 \times 9 + 5 = \underline{\quad} ? \underline{\quad}$	$7 \times 9 + 2 = \underline{\quad} ? \underline{\quad}$

Multiplication Practice

Do not copy. Multiply, and write the products on a folded paper.

	1.	2.	3.	4.	5.	6.	7.
(A)	442 <u>7</u>	884 <u>7</u>	355 <u>7</u>	173 <u>7</u>	704 <u>7</u>	470 <u>7</u>	396 <u>7</u>
(B)	763 <u>7</u>	569 <u>7</u>	615 <u>7</u>	922 <u>7</u>	979 <u>7</u>	265 <u>7</u>	105 <u>7</u>
(C)	23 <u>7</u>	502 <u>7</u>	672 <u>7</u>	536 <u>7</u>	945 <u>7</u>	319 <u>7</u>	859 <u>7</u>
(D)	488 <u>7</u>	578 <u>7</u>	165 <u>7</u>	299 <u>7</u>	932 <u>7</u>	838 <u>7</u>	748 <u>7</u>
(E)	806 <u>7</u>	828 <u>7</u>	326 <u>7</u>	541 <u>7</u>	797 <u>7</u>	57 <u>7</u>	887 <u>7</u>

Problems

1. There are 42 children in a third-grade room. How much will it cost to buy a box of crayons for each child in the room at 7¢ a box?

2. Ralph had three weeks' vacation at Christmas time. How many days' vacation did he have?

3. Harry's father was paying \$52.50 a month rent, but he was told that his rent would be raised \$5.00 a month. How much would his rent be a month then?

4. One day Robert stayed after school and sharpened pencils for all the children. He sharpened 70 pencils in all, which was the same as 2 pencils for each child. How many pupils were there in Robert's room?

5. James's father, who is a grocer, bought 48 dozen eggs. He packed the eggs in boxes containing 2 dozen each. How many boxes did he use?

6. Paul's father received a gas bill for \$3.25 in September. In October he received a bill for \$4.75. How much higher was his bill in October than in September?

7. On an automobile trip, Jack's family drove 890 miles. Harry's family drove 680 miles on a trip. How much farther did Jack's family drive than Harry's?

8. The Washington School gave an entertainment and charged 5¢ admission. There were 254 people who came. How much money did the school take in all together at the entertainment?

9. If oranges cost 60¢ a dozen, how much will a half dozen oranges cost?

10. Mary is making bookmarks out of ribbon. She makes each one 6 inches long. She bought a piece of ribbon 120 inches long. How many bookmarks can Mary make out of her long piece of ribbon?

Multiplying by 8, with Carrying

7 5 2 0 1 3 6 9 4 8

1. Multiply each of the numbers from 0 to 9 by 8.
2. Multiply each by 8, and add 1 to each product.
3. Multiply each by 8, and add 2.
4. Multiply each by 8, and add 3, 4, 5, 6, and 7.

Multiplication Practice

Do not copy. Multiply, and write the products on a folded paper.

	1.	2.	3.	4.	5.
(A)	$\begin{array}{r} 732 \\ 8 \\ \hline \end{array}$	$\begin{array}{r} 937 \\ 8 \\ \hline \end{array}$	$\begin{array}{r} 442 \\ 8 \\ \hline \end{array}$	$\begin{array}{r} 832 \\ 8 \\ \hline \end{array}$	$\begin{array}{r} 135 \\ 8 \\ \hline \end{array}$
(B)	$\begin{array}{r} 163 \\ 8 \\ \hline \end{array}$	$\begin{array}{r} 984 \\ 8 \\ \hline \end{array}$	$\begin{array}{r} 765 \\ 8 \\ \hline \end{array}$	$\begin{array}{r} 867 \\ 8 \\ \hline \end{array}$	$\begin{array}{r} 568 \\ 8 \\ \hline \end{array}$
(C)	$\begin{array}{r} 554 \\ 8 \\ \hline \end{array}$	$\begin{array}{r} 918 \\ 8 \\ \hline \end{array}$	$\begin{array}{r} 815 \\ 8 \\ \hline \end{array}$	$\begin{array}{r} 858 \\ 8 \\ \hline \end{array}$	$\begin{array}{r} 904 \\ 8 \\ \hline \end{array}$
(D)	$\begin{array}{r} 480 \\ 8 \\ \hline \end{array}$	$\begin{array}{r} 453 \\ 8 \\ \hline \end{array}$	$\begin{array}{r} 103 \\ 8 \\ \hline \end{array}$	$\begin{array}{r} 522 \\ 8 \\ \hline \end{array}$	$\begin{array}{r} 325 \\ 8 \\ \hline \end{array}$
(E)	$\begin{array}{r} 396 \\ 8 \\ \hline \end{array}$	$\begin{array}{r} 470 \\ 8 \\ \hline \end{array}$	$\begin{array}{r} 879 \\ 8 \\ \hline \end{array}$	$\begin{array}{r} 659 \\ 8 \\ \hline \end{array}$	$\begin{array}{r} 589 \\ 8 \\ \hline \end{array}$

Multiplying by 9, with Carrying

5 2 0 1 4 7 9 3 8 6

1. Multiply each of the numbers from 0 to 9 by 9.
2. Multiply each by 9, and add 1 to each product.
3. Multiply each by 9, and add 2.
4. Multiply each by 9, and add 3, 4, 5, 6, 7, and 8.

Multiplication Practice

Do not copy. Multiply, and write the products on a folded paper.

	1.	2.	3.	4.	5.	6.	7.
(A)	414 9 —	996 9 —	589 9 —	985 9 —	294 9 —	62 9 —	482 9 —
(B)	474 9 —	34 9 —	924 9 —	949 9 —	19 9 —	692 9 —	556 9 —
(C)	935 9 —	317 9 —	433 9 —	440 9 —	760 9 —	737 9 —	796 9 —
(D)	725 9 —	118 9 —	783 9 —	446 9 —	105 9 —	288 9 —	265 9 —
(E)	506 9 —	716 9 —	127 9 —	522 9 —	903 9 —	639 9 —	89 9 —

Problems

1. The third-grade room needs 9 new arithmetic books. One book costs 85¢. How much will 9 new arithmetics for the room cost?

2. The Boy Scouts were planning to have a party. There were 138 boys coming. If they used small tables just large enough for 6 boys at a table, how many tables would be needed for all the boys?

3. Mary's mother bought a turkey for Thanksgiving dinner. The turkey weighed 7 pounds and cost \$4.20. How much did Mary's mother pay a pound for the turkey?

4. There were 8 girls at Betty's birthday party. After lunch Betty's mother took them to the movies. If one ticket to the movies cost 25¢, how much did tickets for all the girls cost?

5. A train which was due in St. Louis at 5:30 P.M. was $2\frac{1}{2}$ hours late. At what time did the train arrive in St. Louis?

6. A milk dealer has just 60 quarts of milk. How many pint bottles can he fill with this amount of milk?

7. Frank weighs 63 pounds, and his younger brother weighs 48 pounds. How much heavier is Frank than his brother?

8. Four children wanted to go together to buy their mother a birthday gift which would cost \$1.20. How much would each child need to pay if they shared the cost equally?

9. When Helen went to the store, she had \$2.98 in her pocketbook. After buying some things, Helen had only 87¢ in her pocketbook. How much money did she spend?

10. One day Jack and his father weighed themselves. Jack's father weighed 198 pounds, and Jack weighed 87 pounds. How many pounds less than his father did Jack weigh?

11. Tom weighs 89 pounds, and Henry weighs 95 pounds. If they get on the scales together, what weight will the scales show?

Addition Practice

Do not copy. Add, and write the sums on a folded paper.

	1.	2.	3.	4.	5.
(A)	110	210	151	260	201
	146	205	103	108	311
	885	697	776	567	578
	<u>600</u>	<u>513</u>	<u>425</u>	<u>711</u>	<u>445</u>
(B)	110	321	220	101	120
	631	444	207	260	530
	188	397	964	929	439
	506	205	281	462	102
	<u>463</u>	<u>721</u>	<u>696</u>	<u>537</u>	<u>897</u>
(C)	330	331	320	441	540
	203	305	152	216	104
	649	853	799	582	468
	130	140	203	307	213
	<u>798</u>	<u>799</u>	<u>445</u>	<u>655</u>	<u>986</u>

Dividing by 6, 7, 8, and 9, with Remainders

When you divide by 6, you may have 1, 2, 3, 4, or 5 as a remainder. When you divide by 7, you may have 1, 2, 3, 4, 5, or 6 as a remainder. When you divide by 8, you may have 1, 2, 3, 4, 5, 6, or 7 as a remainder. When you divide by 9, you may have 1, 2, 3, 4, 5, 6, 7, or 8 as a remainder. In the next lesson are all the facts you need to know in dividing by 6 when there is a remainder.

Dividing by 6, with Remainders

Place a folded paper above these examples. Divide, and write the quotients and remainders on the folded paper. In the first example, think, "6 into 5, 0 time, and 5 over." Write 0, R. 5. Do the others in the same way.

	1.	2.	3.	4.	5.
	0, R. 5				
(A)	$6\overline{)5}$	$6\overline{)8}$	$6\overline{)3}$	$6\overline{)10}$	$6\overline{)2}$
(B)	$6\overline{)11}$	$6\overline{)1}$	$6\overline{)4}$	$6\overline{)13}$	$6\overline{)19}$
(C)	$6\overline{)22}$	$6\overline{)15}$	$6\overline{)23}$	$6\overline{)21}$	$6\overline{)17}$
(D)	$6\overline{)25}$	$6\overline{)16}$	$6\overline{)26}$	$6\overline{)35}$	$6\overline{)27}$
(E)	$6\overline{)34}$	$6\overline{)29}$	$6\overline{)40}$	$6\overline{)44}$	$6\overline{)37}$
(F)	$6\overline{)38}$	$6\overline{)43}$	$6\overline{)46}$	$6\overline{)39}$	$6\overline{)47}$
(G)	$6\overline{)55}$	$6\overline{)50}$	$6\overline{)58}$	$6\overline{)52}$	$6\overline{)51}$
(H)	$6\overline{)7}$	$6\overline{)14}$	$6\overline{)31}$	$6\overline{)33}$	$6\overline{)41}$
(I)	$6\overline{)9}$	$6\overline{)20}$	$6\overline{)32}$	$6\overline{)28}$	$6\overline{)45}$
(J)	$6\overline{)56}$	$6\overline{)53}$	$6\overline{)57}$	$6\overline{)49}$	$6\overline{)59}$

Dividing by 7, with Remainders

Think the right answers for these:

1.	2.	3.
(A) $9 \div 7 = 1, R. 2$	$22 \div 7 = 3, R. 1$	$6 \div 7 = _?, R. _?$
(B) $1 \div 7 = 0, R. 1$	$15 \div 7 = _?, R. _?$	$23 \div 7 = _?, R. _?$
(C) $17 \div 7 = _?, R. _?$	$2 \div 7 = _?, R. _?$	$16 \div 7 = _?, R. _?$
(D) $24 \div 7 = _?, R. _?$	$31 \div 7 = _?, R. _?$	$43 \div 7 = _?, R. _?$
(E) $37 \div 7 = _?, R. _?$	$10 \div 7 = _?, R. _?$	$12 \div 7 = _?, R. _?$
(F) $3 \div 7 = _?, R. _?$	$25 \div 7 = _?, R. _?$	$32 \div 7 = _?, R. _?$
(G) $30 \div 7 = _?, R. _?$	$34 \div 7 = _?, R. _?$	$41 \div 7 = _?, R. _?$
(H) $36 \div 7 = _?, R. _?$	$4 \div 7 = _?, R. _?$	$50 \div 7 = _?, R. _?$
(I) $47 \div 7 = _?, R. _?$	$18 \div 7 = _?, R. _?$	$5 \div 7 = _?, R. _?$
(J) $8 \div 7 = _?, R. _?$	$27 \div 7 = _?, R. _?$	$11 \div 7 = _?, R. _?$
(K) $20 \div 7 = _?, R. _?$	$46 \div 7 = _?, R. _?$	$19 \div 7 = _?, R. _?$
(L) $29 \div 7 = _?, R. _?$	$13 \div 7 = _?, R. _?$	$26 \div 7 = _?, R. _?$
(M) $38 \div 7 = _?, R. _?$	$39 \div 7 = _?, R. _?$	$33 \div 7 = _?, R. _?$
(N) $44 \div 7 = _?, R. _?$	$45 \div 7 = _?, R. _?$	$40 \div 7 = _?, R. _?$
(O) $53 \div 7 = _?, R. _?$	$48 \div 7 = _?, R. _?$	$52 \div 7 = _?, R. _?$
(P) $55 \div 7 = _?, R. _?$	$51 \div 7 = _?, R. _?$	$60 \div 7 = _?, R. _?$
(Q) $58 \div 7 = _?, R. _?$	$54 \div 7 = _?, R. _?$	$62 \div 7 = _?, R. _?$
(R) $61 \div 7 = _?, R. _?$	$59 \div 7 = _?, R. _?$	$65 \div 7 = _?, R. _?$
(S) $67 \div 7 = _?, R. _?$	$64 \div 7 = _?, R. _?$	$68 \div 7 = _?, R. _?$
(T) $69 \div 7 = _?, R. _?$	$66 \div 7 = _?, R. _?$	$57 \div 7 = _?, R. _?$

Problems

1. A man had a piece of rope 112 feet long which he wanted to cut up and sell for jumping ropes. If he made each jumping rope 7 feet long, how many jumping ropes could he make from his long piece of rope?

2. Fred and Jim collected their mother's old magazines and sold them. One day Fred sold \$1.47 worth of magazines, and Jim sold 38¢ worth more than Fred. How much money did Jim receive for the magazines he sold?

3. In sewing class, the teacher had a piece of ribbon 108 inches long. She wanted to divide the piece of ribbon equally among 6 girls. How long a piece of ribbon could each girl have?

4. Jack delivers packages for a drug store. He is paid 7¢ for each package he delivers. He wants to earn enough money to buy a baseball outfit which will cost \$4.20. How many packages will Jack have to deliver to earn enough money to buy the baseball outfit?

5. Paul and Harry have new bicycles. Paul's bicycle cost \$25.00, and Harry's cost \$37.50. How much more did Harry's bicycle cost than Paul's?

6. Last night Jane went to bed at nine o'clock. She got up at seven this morning. How many hours was Jane in bed last night?

7. There were 168 children in the third and fourth grades of the Roosevelt School. They planned to have a picnic at the beach. The children's fathers promised to take the children to the beach in their cars. If 7 children could go in each car, how many cars would be needed to take all the children?

8. Mrs. Brown bought her little boy a new suit at a sale. The suit was marked \$15.50, but she got it for \$12.00 at the sale. How much did Mrs. Brown save on the suit?

9. The school nurse weighed Mary and Sally. Mary weighed 51 pounds, and Sally weighed 60 pounds. How much lighter was Mary than Sally?

Dividing by 8 and 9, with Remainders

1. Write all the numbers 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, and so on, to 79, in mixed order on your paper. Divide each of them by 8, writing the quotient, and remainder if there is any.

2. Write all the numbers from 0 to 89, in mixed order, on your paper and divide each of them by 9, writing the quotient, and remainder if there is any.

Division Practice

Do not copy. Place a folded paper above each row and write the answers on the paper.

	1.	2.	3.	4.	5.	6.	7.
(A)	$5\overline{)570}$	$6\overline{)684}$	$8\overline{)976}$	$5\overline{)815}$	$7\overline{)161}$	$5\overline{)430}$	$6\overline{)132}$
(B)	$8\overline{)968}$	$5\overline{)125}$	$7\overline{)924}$	$6\overline{)240}$	$5\overline{)320}$	$7\overline{)147}$	$6\overline{)744}$
(C)	$8\overline{)104}$	$7\overline{)231}$	$6\overline{)858}$	$9\overline{)198}$	$8\overline{)256}$	$6\overline{)186}$	$7\overline{)210}$

Problems

1. How many weeks are 350 days?

2. Alice's mother paid \$8.40 for 4 yards of silk. How much did the silk cost a yard?

3. Dick has been saving stamps. So far, he has 112 stamps. He is going to paste his stamps in a book and put 8 stamps on each page. How many pages of his book can Dick fill?

4. When street-car fare is 7¢, how many times can you ride for \$1.00, and how much money will you have left over?

5. William saved 35 cents. How many more cents must he save in order to have 75 cents?

6. During vacation Jack worked in a grocery store. He earned \$6.60 a week and worked six days a week. This was equal to how much each day?

7. Three men earned \$861. How many dollars did each man earn if each received the same amount?

8. There are 12 things in a dozen. Mrs. Smith bought 3 dozen eggs. How many eggs did she buy?

9. Helen went to the store for her mother and bought a pound of butter for 51¢. She gave the clerk a dollar. How much change should the clerk have given Helen?

10. Charles is reading a book with 249 pages in it. He has read 129 pages. How many pages must he read to finish the book?

11. A rug costs \$125. How many dollars will it take to buy 5 rugs of that kind?

General Practice 24

Write the answers on a sheet of paper. Time allowed: 12 minutes.

1.	2.	3.	4.
Multiply:	Add:	Divide:	Subtract:
\$4.75	\$210		\$8.01
2	205	9)857	7.97
<hr/>	697		<hr/>
	513		
	311		
	<hr/>		

5.	6.	7.	8.
Divide:	Subtract:	Multiply:	Add:
	305	384	331
7) <u>957</u>	<u>286</u>	<u>3</u>	305
			140
			799
			<u>102</u>

9. Jack has been saving his money to buy Christmas presents. He opened his bank and found that he had \$3.87 in it. He spent all but 55¢ for presents. How much money did Jack spend for presents?

10. Mary's father wants to buy a radio that costs \$95. If he saves \$5 each week toward the radio, how many weeks will it take Mary's father to save enough money to buy the radio?

11. Ruth went to visit her grandmother. She got on the train at 10 A.M. It was 5 P.M. when the train reached the city where her grandmother lives. How many hours was Ruth on the train?

12. Mrs. White buys two quarts of milk each day. There are 31 days in March. How many quarts of milk did Mrs. White buy during the month of March?

The Months of the Year

1. As you may know, there are twelve months in a year.

2. The names of the months in the order in which they come are January, February, March, April, May, June, July, August, September, October, November, and December.

JANUARY							FEBRUARY							MARCH						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
1	2	3	4	5	6	7	5	6	7	8	9	10	11	4	5	6	7	8	9	10
8	9	10	11	12	13	14	12	13	14	15	16	17	18	11	12	13	14	15	16	17
15	16	17	18	19	20	21	19	20	21	22	23	24	25	18	19	20	21	22	23	24
22	23	24	25	26	27	28	26	27	28	29	-	-	-	25	26	27	28	29	30	31
29	30	31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
APRIL							MAY							JUNE						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
1	2	3	4	5	6	7	-	-	1	2	3	4	5	-	-	-	-	-	1	2
8	9	10	11	12	13	14	6	7	8	9	10	11	12	3	4	5	6	7	8	9
15	16	17	18	19	20	21	13	14	15	16	17	18	19	10	11	12	13	14	15	16
22	23	24	25	26	27	28	20	21	22	23	24	25	26	17	18	19	20	21	22	23
29	30	-	-	-	-	-	27	28	29	30	31	-	-	24	25	26	27	28	29	30
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
JULY							AUGUST							SEPTEMBER						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
1	2	3	4	5	6	7	5	6	7	8	9	10	11	2	3	4	5	6	7	8
8	9	10	11	12	13	14	12	13	14	15	16	17	18	9	10	11	12	13	14	15
15	16	17	18	19	20	21	19	20	21	22	23	24	25	16	17	18	19	20	21	22
22	23	24	25	26	27	28	26	27	28	29	30	31	-	23	24	25	26	27	28	29
29	30	31	-	-	-	-	-	-	-	-	-	-	-	30	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
OCTOBER							NOVEMBER							DECEMBER						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
-	1	2	3	4	5	6	-	-	-	1	2	3	-	-	-	-	-	-	-	1
7	8	9	10	11	12	13	4	5	6	7	8	9	10	2	3	4	5	6	7	8
14	15	16	17	18	19	20	11	12	13	14	15	16	17	9	10	11	12	13	14	15
21	22	23	24	25	26	27	18	19	20	21	22	23	24	16	17	18	19	20	21	22
28	29	30	31	-	-	-	25	26	27	28	29	30	-	23	24	25	26	27	28	29
-	-	-	-	-	-	-	-	-	-	-	-	-	-	30	31	-	-	-	-	-

3. Here is a short way of writing the names of some of the months.

Jan. for January

Feb. for February

Mar. for March

Apr. for April

Aug. for August

Sept. for September

Oct. for October

Nov. for November

Dec. for December

4. April, June, September, and November have 30 days each.

5. January, March, May, July, August, October, and December have 31 days each.

6. February has 28 days except in "leap year," when it has 29 days. Leap year comes every four years when the number of the year can be divided exactly by 4.

7. From January to July, every other month has 31 days. From August to December, every other month has 31 days. The rest have 30 days each except February, which has 28 days (or, in leap year, 29 days).

8. Here is a way by which you can always tell how many days there are in each month. Hold up



your left hand with fingers stretched out. Beginning with the end of the first finger, say, "January." Then, dropping down between the first and second fingers, say, "February." Then, at the end of your middle finger, say, "March." Keep doing this until you get to the end of your little finger. Then

start over. Did you notice that all the months you named at the end of your fingers have 31 days each? Did you notice that the months you named between your fingers, except February, have 30 days?

9. Give the names of the months in a year.

10. What do these stand for: Jan., Feb., Mar., Apr., Aug., Sept., Oct., Nov., and Dec.?

11. How many days are there in April? In June? In September? In November?

12. How many days are there in January? In March? In May? In July? In August? In October? In December?

13. How many days are there in February?

14. Here is an old, old verse that tells you how many days there are in each month:

“Thirty days has September,
April, June, and November.
All the rest have thirty-one
Save poor February alone,
Which has but twenty-eight in fine,
Till leap year gives it twenty-nine.”

Questions about Time

1. What day of the month is it to-day?
2. What day of the month will to-morrow be? Day after to-morrow?
3. What day of the month was yesterday? Day before yesterday?
4. On what day of the month did your school begin?
5. On what day of the month will it end?
6. When is your birthday?
7. Kate takes a music lesson every Saturday afternoon. On what dates in May, in the calendar shown on page 297, did she take music lessons?

Review

On page 300 is a review of what you have been studying. Write the numbers 1 to 10 on a sheet of paper. After each number you have written, write the answer to the question that has the same number.

At the end of each question you will see a page number. If you missed any part of the test, turn back to the page number given after that part of the test, where you will find how to answer what you missed. Study what you missed until you are sure you know what to do. Then go back to the review and again try the part you missed. Do this until you do not miss anything or until your teacher tells you to work on something else.

1. When you multiply by 7, what numbers may you need to carry? (Page 279)

2. What number do you carry in multiplying 46 by 8? (Page 286)

3. What numbers may you need to carry when you multiply by 9? (Page 279)

4. What is the remainder in dividing 487 by 6? (Page 291)

5. Multiply 878 by 7. (Page 284)

6. What are the names of the months of the year? (Page 296)

7. What is the quotient of $472 \div 8$? (Page 294)

8. What is the product of 346×9 ? (Page 287)

9. What is a short way of writing the names of the last four months of the year? (Page 297)

10. What numbers may you need to carry in multiplying by 8? (Page 279)

TABLES

LENGTH

12 inches (in.)	= 1 foot (ft.)
3 feet	= 1 yard (yd.)
$16\frac{1}{2}$ feet = $5\frac{1}{2}$ yards	= 1 rod (rd.)
5280 feet = 1760 yards = 320 rods	= 1 mile (mi.)

AREA

144 square inches (sq. in.)	= 1 square foot (sq. ft.)
9 square feet	= 1 square yard (sq. yd.)
$30\frac{1}{4}$ square yards	= 1 square rod (sq. rd.)
43,560 square feet = 160 square rods	= 1 acre (A.)
640 acres	= 1 square mile (sq. mi.)

WEIGHT

16 ounces (oz.)	= 1 pound (lb.)
100 pounds	= 1 hundredweight (cwt.)
2000 pounds	= 1 ton (T.)

LIQUID MEASURE

2 pints (pt.)	= 1 quart (qt.)
4 quarts	= 1 gallon (gal.)

DRY MEASURE

2 pints	= 1 quart
8 quarts	= 1 peck (pk.)
4 pecks	= 1 bushel (bu.)

TIME

60 seconds (sec.)	= 1 minute (min.)
60 minutes	= 1 hour (hr.)
24 hours	= 1 day (da.)
7 days	= 1 week (wk.)
30 days	= 1 month (mo.) in business
12 months	= 1 year (yr.)
365 days	= 1 year
366 days	= 1 leap year

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II; III; IV; V; VI; VII; VIII; IX; X; XI; XII 12. V;

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PAGE 126. — 1. 1 2. 43 3. 5 4. 794 5. Add.
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PAGE 128. — 6. Long hand at 6; short hand between 1 and 2.
Long hand at 6; short hand between 7 and 8. Long hand at 6;
short hand between 9 and 10. Long hand at 6; short hand
between 2 and 3. Long hand at 6; short hand between 6 and 7
7. 5 : 30 o'clock; 12 : 30 o'clock; 8 : 30 o'clock 8. 3; 4 9. 5

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5C. 470	1D. 291
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 5. 11 years old 6. 6 7. \$8.70 8. 11 9. 16 pounds

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 6. 14¢ 7. 12¢ 8. 16¢ 9. 15¢ 10. 57¢

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PAGE 162. — 1. 12 2. 9 3. 7 4. 12 5. 4 6. 6 7. 11
 8. 1 9. 7 10. 8 11. 9 12. 3.

PAGE 163. — 1. 15¢ 2. 20¢; 10¢; 25¢; 15¢ 3. 4; 8; 3;
 5; 2 4. 10¢; 20¢; 15¢; 25¢; 35¢; 30¢; 45¢; 40¢ 5. 2; 4;
 6; 3; 5; 9; 8; 7 6. 3 7. 20 8. 15¢; 10¢; 20¢; 35¢

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PAGE 185. — 1. 12¢ 2. 18¢ 3. 8 4. 36 miles 5. 5¢
6. 36¢; 45¢; 18¢ 7. 5¢ 8. 36; 18 9. 6 10. 7¢; 8¢; 6¢

PAGE 187. — 1. 20 2. 24 3. 23 4. 25 5. 25 6. 22
7. 21 8. 25 9. 26

PAGE 189. — 1. 797 2. 36 3. 4 4. 832 5. 12 6. 6
7. 81 8. 142 9. 17 10. \$995 11. \$5 12. 36

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7. 7 8. 35 9. 5 10. 7 11. 0 12. 12 13. 5
14. 10¢ 15. \$14 16. 18¢

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1. 2; 4; 3 2. 24 3. 3; 2; 1 4. 27¢; 18¢ 5. 18¢
6. 5; 3 7. 3; 4; 6; 8 8. \$30 9. 27; 45; 36 10. 3
11. 12; 15 12. 4

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4. \$84 5. 99¢ 6. 48¢ 7. 44¢; 88¢; 77¢ 8. 84¢; 96¢; 48¢

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1. 62 2. 86 3. 876 4. 9 5. 742 6. 62 7. 275

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18. Dick 10. 5 11. 13 12. 16¢

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PAGE 210. — 1A. \$462 2A. 206 3A. 840 4A. 604

5A. \$480 6A. 286 7A. \$802 8A. 669 1B. 404 2B. \$888

3B. 903 4B. 399 5B. \$846 6B. 888 7B. 993 8B. \$336

1C. 648 2C. 699 3C. \$448 4C. 777 5C. 882 6C. \$426

7C. 260 8C. 622

PAGE 211. — 1. 26 2. 21 3. 23 4. 19 5. 22 6. 21

7. 22 8. 24 9. 24

PAGE 212. — 1. 21¢ 2. 32¢ 3. \$12 4. 21 5. 12; 6; 8

PAGE 213. — 1A. 11 2A. 11 3A. 14 4A. 23 5A. 23

1B. 11 2B. 12 3B. 12 4B. 21 5B. 33 1C. 24 2C. 34

3C. 13 4C. 13 5C. 22 1D. 21 2D. 31 3D. 41

4D. 32 5D. 21 1E. 44 2E. 22 3E. 42 4E. 12 5E. 43

1. \$121 2. 211 3. 212 4. \$123 5. 321

PAGE 214. — 1A. 212 2A. 312 3A. 434 4A. 111 5A. 131

1B. 431 2B. 211 3B. 314 4B. 111 5B. 311 1C. 111

2C. 322 3C. 311 4C. 400 5C. 342 1D. 421 2D. 111

3D. 334 4D. 313 5D. 442 1E. 122 2E. 212 3E. 423

4E. 110 5E. 123

PAGE 215. — 1. 286 2. 43 3. 81¢ 4. 305 5. 94 6. 840

7. 132 8. 213 9. 9 10. 4 11. 84 12. 20; 19; 18;

18; 20. Harry and Daisy

PAGE 216. — 1. 5 2. 35 3. 45 4. 1329 5. 35 6. 123

7. 13 8. 13 9. \$27 10. 8 inches

PAGE 217. — 1A. 903 2A. \$.62 3A. 286 4A. 462

5A. \$68 6A. 404 7A. 64¢ 1B. 604 2B. \$399 3B. 60

4B. \$8.02 5B. 206 6B. 84¢ 7B. 888 1C. 846 2C. \$4.80

3C. 648 4C. 96 5C. \$6.69 6C. 840 7C. 90¢

PAGE 219. — 4. 6 : 15; 8 : 15; 8 : 45 6. Long hand at 3; short
hand between 4 and 5. Long hand at 9; short hand between
5 and 6. Long hand at 9; short hand between 11 and 12. Long
hand at 3; short hand between 2 and 3. 8. Long hand at 3;
short hand between 11 and 12. Long hand at 9; short hand
between 6 and 7. Long hand at 9; short hand between 8 and 9.
Long hand at 3; short hand between 3 and 4. Long hand at 9;
short hand between 3 and 4

PAGE 224. — 1A. 677 2A. 211 3A. 354 4A. 22

5A. 124 6A. 62 1B. 57 2B. 193 3B. 518 4B. 93

5B. 25 6B. 171 1C. 71 2C. 84 3C. 587 4C. 369

5C. 9 6C. 39 1D. 8 2D. 66 3D. 366 4D. 222
 5D. 483 6D. 8

1. 83¢ 2. 23 3. \$6.43 4. \$6.20 5. 423 6. \$8.52
 7. 699 8. 156 9. 120 10. 43 11. \$12 12. 22¢

PAGE 229. — 1. 11 2. 54 3. \$1.50 4. 30 5. 78¢
 6. 36

PAGE 230. — Multiplication Practice. 1A. 54 2A. 260
 3A. 84 4A. 138 5A. 132 6A. 96 7A. 60 8A. 112
 1B. 378 2B. 156 3B. 310 4B. 134 5B. 158 6B. 194
 7B. 172 8B. 96 1C. 50 2C. 72 3C. 256 4C. 118
 5C. 410 6C. 74 7C. 336 8C. 192

Addition Practice. 1A. 1131 2A. 1499 3A. 1514 4A. 1229
 5A. 1109 1B. 1542 2B. 1291 3B. 1304 4B. 1309
 5B. 1005 1C. 1292 2C. 1703 3C. 991 4C. 1604
 5C. 1012

PAGE 233. — 1. 54 feet 2. 81 feet 3. 130 feet 4. 260 feet
 5. 195 feet 6. 0 feet

PAGE 234. — 1. 152 2. 180 3. 912 4. 32 5. \$395
 6. 92 7. 342 8. \$215 9. \$5 10. 19; 19; 21; 20; 20.
 James won. 11. \$16 12. 9

PAGE 235. — 1. \$2.70 2. \$1.70 3. \$2.90 4. \$8.50; \$17.00
 5. \$24.30

PAGE 236. — 1A. 2718 2A. 3240 3A. 3627 4A. 1496
 5A. 4536 6A. 2184 7A. 4545 8A. 1491 1B. 1632 2B. 1698
 3B. 2416 4B. 2187 5B. 4024 6B. 3276 7B. 2835 8B. 4045
 1C. 2198 2C. 2832 3C. 2451 4C. 3590 5C. 1874
 6C. 2784 7C. 3628 8C. 4535

PAGE 238. — 1. \$304 2. \$300 3. \$426 4. \$7.50

PAGE 239. — 1A. 604 2A. 1124 3A. 900 4A. 928
 5A. 1522 6A. 568 7A. 1380 8A. 744 1B. 4689
 2B. 3360 3B. 1629 4B. 342 5B. 2856 6B. 4600
 7B. 2583 8B. 4155 1C. 1788 2C. 1724 3C. 2220
 4C. 4605 5C. 1964 6C. 3647 7C. 3180 8C. 4168
 1D. 3780 2D. 1689 3D. 1953 4D. 2160 5D. 1368
 6D. 1786 7D. 3655 8D. 2940

PAGE 240. — 1. 621 2. 122 3. 509 4. \$1786 5. 21
 6. \$852 7. 3224 8. \$589 9. \$2.15 10. \$2.67
 11. 270 12. 12

PAGE 242. — 1. 730 days 2. 1095 days 3. \$3.70 4. \$19.00
 5. \$15.80

PAGE 244. — 1A. 861 2A. 1752 3A. \$531 4A. 1518

5A. 602 6A. 1014 1B. 2523 2B. \$441 3B. 1018 4B. 1749
 5B. 1364 6B. 1962 1C. 1824 2C. 1194 3C. 2235 4C. 2406
 5C. \$801 6C. 304 1D. 720 2D. \$1132 3D. 265
 4D. 170 5D. \$1804 6D. \$2.55 1E. 610 2E. 2612
 3E. 1056 4E. 2480 5E. 710 6E. 944

PAGE 246. — First Division Practice. 1A. 3, R. 1 2A. 6, R. 1
 3A. 0, R. 1 4A. 6, R. 1 5A. 9, R. 1 1B. 5, R. 1 2B. 0, R. 1
 3B. 2, R. 1 4B. 4, R. 1 5B. 4, R. 1 1C. 1, R. 1 2C. 7, R. 1
 3C. 0, R. 1 4C. 3, R. 1 5C. 5, R. 1 1D. 1, R. 1 2D. 2, R. 1
 3D. 5, R. 1 4D. 3, R. 1 5D. 8, R. 1

Second Division Practice. 1A. 5, R. 1 2A. 7, R. 1
 3A. 2, R. 1 4A. 1, R. 1 5A. 3, R. 1 1B. 1, R. 1 2B. 1, R. 1
 3B. 4, R. 1 4B. 3, R. 1 5B. 9, R. 1 1C. 4, R. 1 2C. 8, R. 1
 3C. 2, R. 1 4C. 2, R. 1 5C. 0, R. 1 1D. 3, R. 1 2D. 0, R. 1
 3D. 5, R. 1 4D. 1, R. 1 5D. 8, R. 1 1E. 7, R. 1 2E. 4, R. 1
 3E. 2, R. 1 4E. 9, R. 1 5E. 2, R. 1

PAGE 247. — 1. 9 quarts and 1 pint remaining 2. 8 girls and
 1 peach remaining 3. 3 apples and 1 apple remaining 4. 6; 1¢
 5. \$7.30 6. 16 7. 18; 12; 24 8. 8; 3; 7; 4; 5 yards and
 1 foot remaining; 7 yards and 1 foot remaining; 3 yards and 1 foot
 remaining 9. 7 10. 8 11. 8; 24; 12; 20 12. 9 13. \$850
 14. \$1275

PAGE 249. — 1. 55 2. 311 3. \$6.94 4. 669 5. 121
 6. \$.73 7. \$864 8. \$.52 9. 45 10. 128 11. 12 12. 76

PAGE 252. — 1. 38 2. 9 stamps and 1¢ remaining 3. 17
 cards and 1¢ change 4. 8 quarts and 1 pint; 7 quarts and
 1 pint; 5 quarts and 1 pint; 6 quarts and 1 pint 5. 48

PAGE 253. — 2A. 32, R. 1 3A. 10, R. 1 4A. 12, R. 1
 5A. 44, R. 1 1B. 17 2B. 36 3B. 28 4B. 46, R. 1
 5B. 40, R. 1 1C. 36, R. 1 2C. 7, R. 1 3C. 48, R. 1
 4C. 15, R. 1 5C. 29, R. 1

PAGE 254. — 1A. 10 2A. 10 3A. 20 4A. 30 5A. 30
 1B. 10 2B. 10 3B. 20 4B. 20 5B. 40

PAGE 255. — 1. 44, R. 1 2. 99 3. \$1.74 4. 400 5. 3035
 6. 2 7. 84 8. 25, R. 1 9. 40 10. 1850 11. \$1.20 12. 131

PAGE 256. — 1A. 7, R. 2 2A. 1, R. 2 3A. 3, R. 1
 4A. 0, R. 1 1B. 2, R. 2 2B. 5, R. 1 3B. 7, R. 1
 4B. 3, R. 2 1C. 9, R. 1 2C. 2, R. 1 3C. 8, R. 2
 4C. 6, R. 1 1D. 8, R. 1 2D. 6, R. 2 3D. 1, R. 1
 4D. 5, R. 2 1E. 4, R. 2 2E. 0, R. 2 3E. 9, R. 2
 4E. 4, R. 1

PAGE 257. — 1A. 2, R. 1 2A. 7, R. 1 3A. 4, R. 4
 4A. 5, R. 4 5A. 0, R. 1 1B. 9, R. 2 2B. 2, R. 3
 3B. 7, R. 2 4B. 1, R. 2 5B. 3, R. 3 1C. 1, R. 3
 2C. 5, R. 1 3C. 6, R. 1 4C. 2, R. 4 5C. 7, R. 3
 1D. 9, R. 3 2D. 1, R. 4 3D. 5, R. 2 4D. 3, R. 1
 5D. 6, R. 2 1E. 9, R. 1 2E. 9, R. 4 3E. 2, R. 2
 4E. 5, R. 3 5E. 3, R. 2 1F. 6, R. 4 2F. 1, R. 1
 3F. 8, R. 3 4F. 4, R. 3 5F. 0, R. 3 1G. 4, R. 1
 2G. 0, R. 4 3G. 8, R. 1 4G. 4, R. 2 5G. 8, R. 2
 1H. 0, R. 2 2H. 3, R. 4 3H. 7, R. 4 4H. 6, R. 3
 5H. 8, R. 4

PAGE 262. — 1. 134 quarts and 1 pint 2. 218 quarts and 1 pint
 3. 15 yards and 2 feet; 41 yards and 1 foot 4. 59 gallons and
 1 quart 5. 26 nickels and 2 pennies 6. 288

1A. 412 2A. 101 3A. 60 4A. 200 5A. 218, R. 3
 1B. 135, R. 3 2B. 213 3B. 423, R. 1 4B. 202, R. 1
 5B. 95 1C. 201, R. 3 2C. 400 3C. 122 4C. 216
 5C. 140, R. 3

PAGE 263. — 1. 81 2. 1962 3. 109 4. 304 5. \$1250
 6. 920 7. 218, R. 3 8. \$375 9. \$2.97 10. 311 11. 24
 12. 51

PAGE 264. — 1. 20¢ 2. 8¢; 12¢; 25¢; 17¢; 15¢; 77¢
 3. 30¢ 4. 12¢ 5. 31¢; 28¢; 31¢; 90¢

PAGE 265. — 1. 1742 2. \$602 3. 135, R. 3 4. 6
 5. 202, R. 1 6. 207 7. 596 8. 531 9. 48 10. 50¢
 11. 238 12. Harry, 22; Dick, 21; James, 22; Mary, 20;
 Daisy, 19. Harry and James

PAGE 268. — 6. 3 : 35 o'clock; 8 : 20 o'clock; 12 : 50 o'clock
 7. 5; 5; 10; 5; 15; 5 8. 4 o'clock 11. Long hand 3 spaces
 past 12; short hand past 4. Long hand 4 spaces past 12;
 short hand past 4. Long hand at 1; short hand past 4. Long
 hand 4 spaces past 1; short hand past 4. Long hand 1 space
 past 4; short hand past 4 13. Long hand 2 spaces before 12;
 short hand nearly to 5. Long hand 2 spaces before 10; short
 hand nearly to 5. Long hand 1 space past 6; short hand between
 4 and 5 14. 3 : 37 o'clock; 8 : 03 o'clock; 8 : 57 o'clock

PAGE 270. — 1. 13 feet 2. $2\frac{1}{2}$ 3. 45¢ 4. \$743 5. \$4.80
 6. 50 7. 56¢ 8. 160 9. 20 10. 22 degrees 11. 70
 12. 510 13. 13

PAGE 271. — 1. 1012 2. \$1900 3. 68 4. 216 5. 1104
 6. 1698 7. 140, R. 3 8. 215 9. \$1.50 10. 13 11. 33 12. 9

PAGE 272. — 1A. 327 2A. 286 3A. 651 4A. 417
 5A. 497 6A. 174 1B. 537 2B. 255 3B. 384 4B. 114
 5B. 231 6B. 595

PAGE 278. — 1. 42; 63; 49 2. 42 3. 7; 56 4. 3
 5. 49¢ 6. 9 7. 64 8. 4; 9; 2; 6; 3 9. 5
 10. 9; 6; 5; 7 11. 8 dollars 12. 21

PAGE 281. — 1A. 3324 2A. 2796 3A. 504 4A. 4554
 5A. 4782 6A. 282 1B. 912 2B. 1830 3B. 4098 4B. 96
 5B. 4194 6B. 5556 1C. 5784 2C. 4374 3C. 1542 4C. 72
 5C. 5268 6C. 2928 1D. 2064 2D. 618 3D. 3612
 4D. 4416 5D. 222 6D. 4614 1E. 5334 2E. 2388
 3E. 1116 4E. 2820 5E. 2538 6E. 4734 1F. 3732
 2F. 834 3F. 144 4F. 5862 5F. 3522 6F. 4674

PAGE 282. — 1. 24 2. 20 minutes 3. 30 4. \$3.68
 5. 12 6. \$3.54 7. \$2.80 8. \$42 9. \$2.15 10. 65¢ 11. 38

PAGE 285. — 1A. 3094 2A. 6188 3A. 2485 4A. 1211
 5A. 4928 6A. 3290 7A. 2772 1B. 5341 2B. 3983
 3B. 4305 4B. 6454 5B. 6853 6B. 1855 7B. 735
 1C. 161 2C. 3514 3C. 4704 4C. 3752 5C. 6615
 6C. 2233 7C. 6013 1D. 3416 2D. 4046 3D. 1155
 4D. 2093 5D. 6524 6D. 5866 7D. 5236 1E. 5642
 2E. 5796 3E. 2282 4E. 3787 5E. 5579 6E. 399
 7E. 6209

1. \$2.94 2. 21 3. \$57.50 4. 35 5. 24 6. \$1.50
 7. 210 miles 8. \$12.70 9. 30¢ 10. 20

PAGE 287. — 1A. 5856 2A. 7496 3A. 3536 4A. 6656
 5A. 1080 1B. 1304 2B. 7872 3B. 6120 4B. 6936
 5B. 4544 1C. 4432 2C. 7344 3C. 6520 4C. 7064
 5C. 7232 1D. 3840 2D. 3624 3D. 824 4D. 4176
 5D. 2600 1E. 3168 2E. 3760 3E. 7032 4E. 5272
 5E. 4712

PAGE 288. — 1A. 3726 2A. 8964 3A. 5301 4A. 8865
 5A. 2646 6A. 558 7A. 4338 1B. 4266 2B. 306 3B. 8316
 4B. 8541 5B. 171 6B. 6228 7B. 5004 1C. 8515 2C. 2853
 3C. 3897 4C. 3960 5C. 6840 6C. 6633 7C. 7164
 1D. 6525 2D. 1062 3D. 7047 4D. 4014 5D. 945
 6D. 2592 7D. 2385 1E. 4554 2E. 6444 3E. 1143
 4E. 4698 5E. 8127 6E. 5751 7E. 801

1. \$7.65 2. 23 3. 60¢ 4. \$2.00 5. 8 : 00 P.M.
 6. 120 7. 15 pounds 8. 30¢ 9. \$2.11 10. 111
 11. 184 pounds

PAGE 290. — 1A. 1741 2A. 1625 3A. 1455 4A. 1646
 5A. 1535 1B. 1898 2B. 2088 3B. 2368 4B. 2289 5B. 2088
 1C. 2110 2C. 2428 3C. 1919 4C. 2201 5C. 2311

PAGE 291. — 1A. 0, R. 5 2A. 1, R. 2 3A. 0, R. 3
 4A. 1, R. 4 5A. 0, R. 2 1B. 1, R. 5 2B. 0, R. 1
 3B. 0, R. 4 4B. 2, R. 1 5B. 3, R. 1 1C. 3, R. 4
 2C. 2, R. 3 3C. 3, R. 5 4C. 3, R. 3 5C. 2, R. 5
 1D. 4, R. 1 2D. 2, R. 4 3D. 4, R. 2 4D. 5, R. 5
 5D. 4, R. 3 1E. 5, R. 4 2E. 4, R. 5 3E. 6, R. 4
 4E. 7, R. 2 5E. 6, R. 1 1F. 6, R. 2 2F. 7, R. 1
 3F. 7, R. 4 4F. 6, R. 3 5F. 7, R. 5 1G. 9, R. 1
 2G. 8, R. 2 3G. 9, R. 4 4G. 8, R. 4 5G. 8, R. 3
 1H. 1, R. 1 2H. 2, R. 2 3H. 5, R. 1 4H. 5, R. 3
 5H. 6, R. 5 1I. 1, R. 3 2I. 3, R. 2 3I. 5, R. 2
 4I. 4, R. 4 5I. 7, R. 3 1J. 9, R. 2 2J. 8, R. 5
 3J. 9, R. 3 4J. 8, R. 1 5J. 9, R. 5

PAGE 292. — 1. 16 2. \$1.85 3. 18 inches 4. 60
 5. \$12.50 6. 10 7. 24 8. \$3.50 9. 9 pounds

PAGE 294. — 1A. 114 2A. 114 3A. 122 4A. 163
 5A. 23 6A. 86 7A. 22 1B. 121 2B. 25 3B. 132
 4B. 40 5B. 64 6B. 21 7B. 124 1C. 13 2C. 33 3C. 143
 4C. 22 5C. 32 6C. 31 7C. 30

1. 50 2. \$2.10 3. 14 4. 14 times; 2¢ remaining 5. 40
 6. \$1.10 7. \$287 8. 36 9. 49¢ 10. 120 pages
 11. \$625

PAGE 295. — 1. \$9.50 2. \$1936 3. 95, R. 2 4. \$.04
 5. 136, R. 5 6. 19 7. 1152 8. 1677 9. \$3.32 10. 19
 11. 7 12. 62

